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# TABLES

FOR

## REGIONAL AND LOCAL ISOSTATIC REDUCTION (AIRY SYSTEM)

FOR

### GRAVITY VALUES

T = 20 km, 30 km and 40 km;

R = 0 km, 29.05 km, 58.10 km, 116.20 km, 174.30 km and 232.40 km

BY

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TABLES FOR  
REGIONAL AND LOCAL ISOSTATIC REDUCTION  
(AIRY SYSTEM) FOR GRAVITY VALUES.

§ I. *The tables and some general considerations about isostatic compensation.*

The purpose of this publication is to give tables for the gravity effect of the isostatic compensation according to the AIRY hypothesis of a floating crust and assuming a regional distribution of the compensating masses. For making the tables more complete and in order to allow a better comparizon, a first column has been added to the tables corresponding to local compensation. The figures of these last mentioned columns are identical to those of the well-known tables of HEISKANEN for the Airy system of reduction <sup>1)</sup>. The further columns of each table correspond to five different degrees of regional spreading of the compensation, the radii  $R$  of the areas of spreading being successively 29.05 km, 58.10 km, 116.20 km, 174.30 km and 232.40 km.

Three sets of tables have been computed, viz for a normal thickness  $T$  of the crust of 20 km, of 30 km and of 40 km; these figures represent the thicknesses of the crust assumed for zero elevation. We have based the tables on the supposition of AIRY of a rigid crust floating on a denser plastic substratum and we have adopted HEISKANEN's figures, 2.67 and 3.27, for the densities of the crust and of the substratum, the crustal density being assumed to be constant over its full height. The differential density of the compensation has, therefore, been assumed to be  $\pm 0.6$ . We have further adhered to the physical supposition of the hydrostatic equilibrium of the crust and so we assumed equality of pressure in the deeper layers below the

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<sup>1)</sup> Dr. W. HEISKANEN, Tables isostatiques pour la réduction dans l'hypothèse de Airy des intensités de la pesanteur observées, Bull. Géod., 30, 1931.

Dr. W. HEISKANEN, New Isostatic Tables for the reduction of gravity values on the basis of Airy's hypothesis, Ann Acad. Fenn. Sc. Ser. A, Tom LI, 9, 1938.

In the second series of tables (1938) Dr. HEISKANEN adopts slightly different assumptions about the compensation than in the first series (1931), viz. equality of mass instead of equality of pressure. In this publication equality of pressure has been assumed; the sign here is the same as that of the Hayford tables and opposite to that of HEISKANEN.

crust. Neglecting the increase of gravity with depth, this corresponds to a vertical dimension of the compensating root for local compensation of  $2.67/0.6 = 4.450$  times the topographic elevation  $h$  and of  $1.642/0.6 = 2.737$  times the sea-depth  $d$ . Because of the converging of the verticals this assumption does not correspond to the exact equality of mass with opposite sign of the topography and of the compensation, and so we must be aware that the topographic and isostatic reduction according to these tables slightly changes the mass of the Earth. We have to take this e.g. into account in the first factor of the formula for normal gravity, which, strictly speaking, should have to be slightly different for gravity values reduced according to different assumptions of the depth of compensation.

The figures of the tables for the regional isostatic reduction correspond to the spreading of the compensation over a certain area in a purely horizontal sense in such a way that the density diminishes from the centre of the area towards the circumference according to a curve derived from the shape of bending of the crust if we consider it as an elastical plate floating on a fluid and loaded by the topography. For a vertical column of the topography of infinitely small cross-section and height  $h$  the compensating mass in case of local compensation is a vertical column of the same cross-section, if we neglect for a moment the converging of the verticals, having a density of  $-0.6$  and reaching from a depth  $T$  to a depth  $T + 4.450h$ . In case of regional compensation we have assumed this compensating mass to be spread horizontally over a much wider column of the same height and of a radius  $R$ , and we suppose the density to be distributed in the same way in all directions from the centre to the circumference and proportional to the vertical ordinate of the bending curve of fig. 1. This figure has been derived from the solution of HERTZ for the bending of a floating elastical plate of infinite dimensions loaded by a concentrated load. The solution shows a central down-bended area as represented by fig. 1, surrounded by concentric waves of small amplitudes that quickly diminish with the distance; these waves have been neglected for our purpose. For further details about this curve the writer may refer to one of his two papers on regional isostatic reduction in the Bulletin Géodésique, nos 29 (1931) or 63 (1940) or to „Fundamental tables for regional isostatic reduction of gravity values” p 5, Verh. Acad. of Sc. of Amsterdam, sect. 1, D1 XVII, 3.

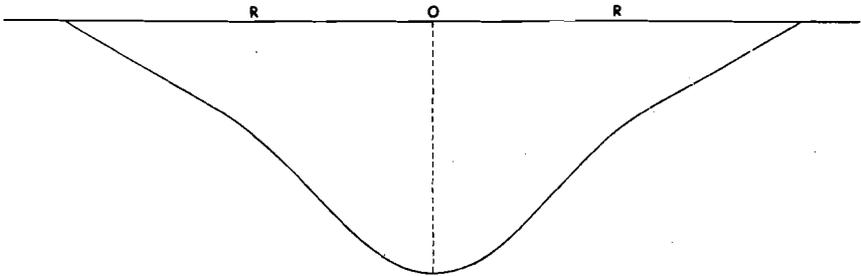


Fig. 1.

The writer has adopted the above assumption for the distribution of the regional compensation as a sufficient approximation to the intended idea of the compensating roots at the lower boundary of the crust being brought about by the bending of the crust under the effect of the topography, the compensating masses being formed by these roots taken with the differential density of  $-0.6$ . Both suppositions give the same amount of compensating mass in every vertical column but the position of these masses differs somewhat in a vertical sense. For a constant topographic elevation over a great extent, however, the position in the vertical sense is also the same. The above assumption about the compensating masses has been adopted for simplifying the computations.

As for the choice of the curve of figure 1 for the way in which the compensation is distributed round the topography in case of regional isostatic compensation, the writer thinks that even when we should not be too strongly convinced of the conditions of a floating elastic plate being applicable to the Earth's crust, this curve may still be adopted. It well fulfills the obvious requirements of giving a maximum value in the middle and gradually decreasing values towards the border of the area.

The tables for  $T = 30$  km give a reduction which in general does not differ much from what the writer has applied by using the provisional tables for regional isostatic reduction published by him in 1931 in the Bulletin Géodésique no 29. For these tables he assumed the compensation to be either concentrated at a depth of 25 km or to be evenly distributed over that depth; the masses have been supposed

to be distributed according to a degree of regionality half way between that of the fourth and fifth column of the present tables. For the regional isostatic reduction of the 486 gravity results at sea, published in „Gravity Expeditions at Sea”, Vol II, 1934, he applied the tables of 1931 in such a way that he assumed 88 % of the compensation to be concentrated at a depth of 25 km and the remaining 12 % to be distributed over that depth. This assumption brings the centre of gravity of the compensation at a depth of 23.5 km.

As the mean load level, according to LAMBERT, lies at a level of 1650 m below sea-level, the bottom of the crust for an elevation coinciding with this level lies at a depth of  $30 - 4.45 \times 1.650 = 22.66$  km according to the assumptions of this paper. This figure may be considered as the mean value for the thickness of the crust and the mean depth for the gravity centres of the compensating masses is  $30 - 2.225 \times 1.650 = 26.33$  km. So this value is near to the value for the old reductions and the radius of the regional distribution likewise if we take the mean of the fourth and fifth columns.

For the tables of this paper the writer has abandoned the arrangement of the compensating masses as assumed in 1931 for the reason that the centre of gravity of the compensation for extensive areas of the same elevation did not come at the right depth while the new assumptions fulfill this condition. The satisfying of this requirement appeared important to the writer.

The present tables have again been made for the Hayford zones as later modified by the separation of zone *O* in two parts *O*<sub>1</sub> and *O*<sub>2</sub>. The inner zones *A* to *G* could be combined in one zone *A—G* and the same could be done for the most distant zones 7 to 1. For the lettered zones *A* to *O*<sub>2</sub> the tables give the effect of the compensation and for the numbered zones 18 to 1 the combined effect of the topography and the compensation; the table values are expressed in 0.1 mgal. For sea-areas we have to enter the tables with a negative value of *h* equal to  $1.642/2.67 = 0.615$  times the depth. For the zones 10, 9, 8 and 7—1 we enter the table with the value *L* of the Hayford correction for topography and compensation for these zones. The writer has chosen this arrangement for these zones because of the simple way we can derive this quantity from the world-maps of HEISKANEN <sup>1)</sup>. As, however, the writer has adopted in his tables the

1) W. HEISKANEN and U. NUOTIO, Topographic-Isostatic world-maps, Ann. Acad. Fenn. Ser. A, Tom LI, 11.

sign of HAYFORD which gives the effect of the compensating masses, while HEISKANEN has taken the contrary sign in his tables and his maps, we have to reverse the sign of the values taken from the maps. If we do not dispose of these maps and if we, therefore, have to determine the mean elevation of these zones, we can derive the HAYFORD correction by multiplying the mean elevation with the factors given on page 16. Each table up to zone 11 has been provided with an auxiliary table for the effect of the elevation of the station which allows to take this effect into account for all the zones from 4 to 11; for the remaining zones the effect is negligible. Preceding the tables, page 19, we have given a short summary of the data concerning the tables, mentioned in this paragraph.

In the same way as it is the case for the local isostatic reduction according to the Airy system, we make an error by deriving the effect of the compensation from the mean elevation of a zone. This error is brought about by the difference of the depth of the compensating masses for different topographic elevations in the zone. The error is smaller for regional than for local compensation because in the first case the effect of a difference of the depth of the compensation is smaller; this is still more the case for a larger degree of regionality. So for the regional reduction we may certainly follow the method adopted by HEISKANEN for local compensation of only separating the sea-parts and the land-parts of a zone, entering the tables with the mean elevation of each part and combining the two results in the ratio of the areas of the two parts. For taking this point into account we can also derive tables of the kind the writer has published in the Bulletin Géodésique, no 38 (1933), for the local Airy system. These tables allow the computation of the correction for the differences of elevation in a zone when the total effect of the zone has been derived from its mean elevation.

In several books and publications on isostatic reductions we find expressed the opinion that an assumption of the compensation at a greater depth comes about to the same as a supposition of a regional distribution of the masses. The origin of this opinion is clearly this that a deeper mass gives a broader attraction field with less intensity in the middle and that the horizontal spreading of a mass must have an analogous effect. The computation of the tables for regional reduction

for different degrees of regionality and for different depths of the compensation enable us to investigate the truth of this assertion.

For this purpose we have made a graphical representation in Plate I of the attraction which the compensation of a ring of topographical elements of a radius  $r$  and a breadth of one kilometer causes in the centre of the ring and we have successively taken four different depths of the compensation, each combined with its local or regional distribution according to four of the five degrees of regionality of our tables; we have omitted the smallest regionality. Each case gives a curve of which the horizontal coordinate is the radius  $r$  and the vertical the attraction in the centre  $O$ . We have taken the height of the ring of topography in such a way that the compensation reaches over a depth of ten kilometers and we have taken its position successively at a depth from 10 to 20 km, from 20 to 30 km, from 30 to 40 km and from 40 to 50 km. So we may appropriately indicate these four different depths of the compensation by  $T = 15$  km, 25 km, 35 km and 45 km; in Plate I the curves have been marked by means of these figures at their maximum point. The density of local compensation has as always been adopted at 0.6. The four curves for local compensation at the left have been drawn, the curves for a distribution radius  $R = 58.10$  km have been represented by dotted lines, those for  $R = 116.2$  km by point-dot lines, those for  $R = 174.30$  km by dotted lines and those for  $R = 232.4$  km by drawn lines.

We have indicated the boundaries of the HAYFORD zones in this range of  $r$  by vertical dotted lines. The integration of the curves between two boundaries would give the attraction of the compensation for the intermediate zone corresponding to a root of a height of ten kilometers.

Each curve of Plate I gives a representation of the attraction of the compensation of a topographical elevation at a distance  $r$ . Only those assumptions regarding the compensation for which the curves would coincide, would give the same reduction for isostasy. We see that no such coincidence occurs and so the above mentioned opinion is not confirmed. The writer is fully aware that this result depends more or less on the chosen system of distribution for the regional reduction as represented by fig. 1, but as the difference of the curves is strong, it does not seem doubtful that we should have to modify it considerably for bringing about a coincidence; we probably should

have to concentrate much more of the mass in the middle part. This would not be acceptable if we wish to adhere to the idea of a regional distribution of the compensating masses, and so we must reject the idea that a deeper situation of the masses has about the same effect as their regional distribution.

There may, however, be a limited amount of truth in the assertion. If we consider parts of the curves we may find fairly good coincidences of this type, so e.g. for the curve of  $R = 0$  and  $T = 45$  km and that of  $R = 58.10$  km and  $T = 35$  km for  $r$  between zero and 25 km, i.e. for the zones  $A$  up to  $L$ . So for a topography limited to this central area we may substitute one reduction for the other. The same is true for substitutions of reductions of a smaller degree of regionality and a greater depth of the masses to one of greater regionality and smaller depth. We have made the following list of cases.

	Radius $R$ of regional distribution	Thickness $T$ of the crust	coincidence range of $r$	coincidence range of zones
	km	km	km	
1°	0	45		
2°	58.10	35	0—25	$A-L^*$
1°	58.10	45		
2°	116.20	20	0—30	$A-L$
1°	116.20	45		
2°	174.30	15	0—45	$A-M^*$
1°	174.30	45		
2°	232.40	15	0—80	$A-N^*$

*Coincidences of different isostatic reductions.*

For the zones marked with an asterisk the coincidence begins already to fail in the outer half of the zone.

We see that in the last case the area of coincidence is rather exten-

sive and so a good part of the topography is included, but if there is an irregular topography outside it, the substitution of the reductions for each other will nevertheless give differences.

For the topography in the distant zones we can predict that such a difference will always occur and the opinion under discussion has, therefore, never included their effect. For great distance the combined effect of the topography and the compensation is practically proportional to the distance of their centres of gravity and so it is nearly independent of a more or less regional distribution in horizontal sense of the compensating masses. The total effect  $E$  of a topographic element of unit cross-section at great distance and its compensation for the Airy system of reduction is approximately

$$E_l = 2.67 h C \left\{ T + \frac{1}{2} (1 + 4.45) h \right\} = 2.67 h C (T + 2.725 h) \quad \text{(for land-stations),}$$

$$E_s = 2.67 h C \left\{ T + \frac{1}{2} (1.626 + 4.450) h \right\} = 2.67 h C (T + 3.038 h) \quad \text{(for sea-stations).}$$

(1)

In the second formula, for sea-stations,  $h$  represents again, if  $d$  is the sea-depth,

$$h = -0.615 d;$$

$C$  is a constant for each zone depending on its distance and position with regard to  $O$  and on the gravity constant of Newton.

Examining the curves of Plate I, we see that each shows a well-marked maximum and that the maxima of each group of four curves for the same degree of regionality are near to each other while the situations of the different groups are clearly apart; their distances from  $O$  are greater for a greater degree of regionality. From the curves we can derive the following approximate formulas for the values of the radius  $r_m$  of the maxima for local compensation:

$$r_m = \frac{2}{3} T, \quad \dots \dots \dots (2A)$$

and for regional compensation (radius of distribution  $R$ ):

$$r_m = \frac{2}{3} T + 0.4 R - 6 \text{ km.} \quad \dots \dots \dots (2B)$$

The last term of the second formula disappears between  $R = 58.10$  km and  $R = 0$  km. According to the meaning of the curves, these formulas

give the radii of the zones for which the compensation of a topographic elevation of the zone has the maximum effect on gravity.

The flat shape of the curves for great regionality corresponds to the small effects of the compensating masses of local topographic irregularities in case of a regional distribution of the compensation. A shift of such an irregularity obviously does not make much difference for the effect of its compensation. For the local reduction, on the contrary, the peaks of the curves imply a great difference of the effect for a shift of a topographical irregularity and so we may conclude that the effect of its compensation is in this case strongly variable with its distance to  $O$ .

In general we can say that the curves may give us an insight in the effect of a change of the system of isostatic reduction on the anomaly field in an area of irregular topography.

In his first paper on the subject of regional isostatic reduction in the „Bulletin Géodésique” no 29 (1931) the writer has discussed the relation of the thickness  $T$  of the crust to the radius  $R$  of the area over which the compensation is distributed. This relation follows from the fact that the shape of the crustal bending, from which we derived the radius  $R$ , directly depends on the thickness of the rigid crust. We found that approximately

$$R = 6 T$$

For the following reasons the writer has not limited his tables to the cases resulting from this relation. We can not be sure that the thickness of the rigid crust entering in the elastical equations from which the deformation of the crust under the load of the topography is derived, is the same as the depth  $T$  of the discontinuity of the density entering in the hypothesis of Airy; it may be that the boundary between the plastic and the rigid properties does not coincide with the change in density. Both boundaries may, moreover, be more or less gradual. So it is preferable to try to determine  $R$  and  $T$  independently of each other from the gravity field and to use these results afterwards for the checking of the above relation, which besides the checking of the identity of both values for the crustal thickness, means the checking of the value of the elasticity modulus of the crust of about 280000

kg/cm<sup>2</sup> used for the computation of the factor 6. We require, therefore, tables enabling us to vary the values of  $T$  and of  $R$  independently of each other.

A further reason for requiring this is found in the fact that probably the hypothesis of only one discontinuity surface of the density is too simple. Probably there are at least two such surfaces, at 10—15 km and at 25—40 km depth. The upper layer is the granitic layer, eventually covered by a third layer, consisting of sediments, and the layer between, called by JEFFREYS the „intermediate layer”, consists according to him of tachylite. GUTENBERG and others think that the seismic results point to even more discontinuities, e.g. in Southern California at depths of 14 km, 25 km, 31 km and 39 km<sup>1)</sup>). In case there are more than one of these surfaces we have to consider the problem how the isostatic compensation is distributed over them. The deformation of each surface gives rise to compensating masses according to the displacement it brings about of one density by another. Discontinuity surfaces in the plastic layer probably are not subject to deformation and so they do not play a part in our problem.

For the hypothesis of regional compensation as caused by the bending of the rigid crust under the load of the surface topography, the problem is easy to solve. We may assume that each discontinuity surface of the crust approximately undergoes the same bending deformation and that it thus gives rise to roots of identical shape in the different surfaces. So the compensation masses for these surfaces show the same horizontal and vertical dimensions while the densities are equal to the differences of the densities of the crustal layers above and below the surfaces. If we indicate the normal depths of the surfaces by  $z_1, z_2 \dots$  and the corresponding differences of density by  $\Delta_1, \Delta_2 \dots$  we may evidently determine the isostatic reduction by means of the tables of this paper by introducing successively for  $T$  the values  $z_1, z_2 \dots$  and, after multiplying the results by  $\Delta_1/0.6, \Delta_2/0.6, \dots$  adding them together. For this purpose we obviously require tables where  $T$  is independent of the radius of regionality  $R$ .

We probably may obtain a reasonable approximation of the result of the reduction by applying the tables only once while introducing a mean value of  $T$  as given by the following formula and keeping the density of 0.6 of the tables. Introducing

1) Travel-time curves at small distances and wave velocities in Southern California. Gerl. Beitr. Geophysik, 35, p 41, 1932.

$$\Sigma z A = M, \dots \dots \dots (3A)$$

we may assume for the mean value of  $T$

$$T = M/0.6 = 1.67 M. \dots \dots \dots (3B)$$

According to the formulas (1) this simplification gives the same result for the distant zones and so for these zones we may certainly admit it. For the nearer zones we require a further investigation for determining the errors thus incurred.

For the local isostatic compensation the question of its distribution in vertical sense in case of more than one crustal layer is not so easy to answer. It depends on the way in which we assume the topography and its compensation to have originated. In the same way as we tacitly understood it to be the case for the hypothesis of regional compensation, we may suppose the topography to have been formed by some process in the upper layer, e.g. by erosion, by sedimentation, by volcanic activity, by lateral compression of the upper layer only, etc. For local compensation we have then to assume the local giving way of the deeper layers and the resulting independent adjustment of the isostatic equilibrium for every vertical column of the crust. For this assumption the roots for the different surfaces of discontinuity of the density are again identical in shape and we may again adopt the above-mentioned program for deriving the isostatic reduction; we successively apply the tables of HEISKANEN or the first column of the tables of this paper for  $T = z_1$ ,  $T = z_2$ , etc, and we add the results together after multiplying them by  $\Delta_1/0.6$ ,  $\Delta_2/0.6$ , etc.

We may, however, also imagine other ways of formation of the topography e.g. by a lateral compression of the whole crust or, in case of submarine areas, by a stretching of it by tensional stresses. In this case it is difficult to adopt a general assumption for the deformation of the surfaces of discontinuity of the crust because practically nothing is yet known about these deformations and they may have an entirely different character for different cases of topography. We may perhaps tentatively venture the supposition that the thickening or the thinning of the different crustal layers is the same, i.e. that the change of thickness of each layer, to be taken positive for an increase, is proportional to the thickness of it, and that no other deformation takes place except the vertical movement corresponding to the adjust-

ment of the isostatic equilibrium. We shall shortly discuss here the consequences of such a hypothesis.

If we indicate the ratio of the change of thickness of a layer to the thickness itself by  $a$ , we assume  $a$  to be the same for all the layers. The roots formed at the surfaces of discontinuity have the vertical dimensions  $h_r = a z_1 - h, a z_2 - h$ , etc and their densities being  $\Delta_1, \Delta_2$ , etc, the equilibrium condition of a vertical column of the crust becomes

$$2.67 h = \Sigma (a z - h) \Delta$$

or as

$$\Sigma \Delta = 0.6 \dots \dots \dots (4 A)$$

we get

$$3.27 h = \Sigma a z \Delta = a M$$

So

$$a = 3.27 \frac{h}{M} \dots \dots \dots (4 B)$$

This formula enables us to determine  $a$  for a given value of the topographic elevation  $h$  and we obtain for the dimensions of the roots

$$h_r = a z - h = (3.27 \frac{z}{M} - 1) h \dots \dots \dots (5)$$

in which we have to substitute the depths  $z$  of the discontinuity surfaces.

As the tables of this paper are based on vertical dimensions of the roots of  $4.45 h$  we may conclude that we have to enter the tables in this case with

$$h' = \frac{h_r}{4.45} = (0.7348 \frac{z}{M} - 0.2247) h \dots \dots \dots (6)$$

So, for determining the isostatic reduction for this supposition we have to apply the tables successively for values of  $T = z_1, z_2, \dots$  and to enter the tables instead of with  $h$  with an elevation as given by formula (6) for  $z = z_1, z_2, \dots$ . We have then to multiply the results by  $\Delta_1/0.6, \Delta_2/0.6, \dots$  and to add them together. We thus obtain the isostatic reduction for our crustal shortening hypothesis.

It is not necessary to keep to the value of 0.6 for the difference of the densities of the upper crustal layer and the substratum. We can also introduce in formula (4 A) another value  $D$  for this difference. We then have to substitute  $2.67 + D$  instead of 3.27 in the formulas (4 B) and (5), while formula (6) becomes

$$h' = \left[ 0.6 \frac{z}{M} + 0.2247 \left( \frac{Dz}{M} - 1 \right) \right] h \quad \dots \quad (7)$$

This same possibility may also be made use of for the original case of our tables of only one discontinuity surface at the bottom of the crust. If for the local or the regional isostatic reduction we wish to change from a differential density 0.6 to another value  $D$ , we assume a vertical dimension for our compensating masses that is  $0.6/D$  times larger and a density that is  $D/0.6$  times the original value. So we have to enter the tables, instead of with the true topographical elevation  $h$ , with a value  $h'$  given by

$$h' = 0.6 \frac{h}{D} \quad \dots \quad (8)$$

and we multiply the result by  $D/0.6$ .

In investigating gravity fields by the application of different methods of isostatic reduction and different values for the degree of regionality or the normal thickness  $T$  of the crust, it is not necessary to adopt the same assumptions for the topography over the whole Earth. We can make special assumptions for certain areas which we then must indicate on the maps used for the reading of the elevations of the zones. For those zones that cross one of these areas we make a separate estimate of the elevation for the part in this area and the part outside it and we introduce these estimates in the tables for the reduction chosen for each of them. We then derive the total effect for the zone by combining the effects in the ratio of the two areas of the zone.

## § 2. *The computation of the tables and of the curves of Plate I.*

The tables have been computed by means of the *Fundamental Tables for Regional Isostatic Reduction* published in the Bulletin Géodésique no 63. The first column of these tables gives the attraction  $F$  in the centre of the Hayford zones for masses of unit density over the whole zone reaching from sea-level to a depth  $H$ ; the tables give  $F$  for all values of  $H$  in kilometers from 0 to 60 km. The further columns give the attraction for the same masses but spread in horizontal sense according to the curve of fig. 1 and for the same values of  $R$  as adopted for the present Airy tables. So each column of the present tables has

been derived from the corresponding column of the fundamental tables. The values of the new tables are expressed in units of 0.1 mgal.

According to the assumptions adopted for these tables the compensation has a density of 0.6 times that of the fundamental tables and reaches from a depth  $T$  to a depth  $T + 4.45 h$ . So the attraction  $p$  at sea-level in the centre of the zone is given by

$$p = \pm 0.6 (F_{T+4.45h} - F_T) \dots (9A)$$

If for sea-stations we introduce a negative value of  $h$  equal to 0.615 times the depth, we get the same formula. So this formula has been used for the computation of the table-values for positive as well as for negative topography. The tables cover a range of  $h$  from + 6000 m to - 5000 m; this last limit corresponds to a sea-depth of 8130 m.

If the station has an elevation of  $h_s$  above sea-level, we obtain

$$p = \pm 0.6 (F_{T+4.45h+h_s} - F_{T+h_s}) \dots (9B)$$

For taking the effect of an elevation of the station into account we have provided each table with an auxiliary table giving the difference of (9B) and (9A) for an elevation  $h_s$  of 1000 m. As the difference is almost proportional to  $h_s$  this suffices for all values of  $h_s$ ; for an arbitrary case we multiply  $dp$  by the elevation in km. For reducing the error thus incurred for great values of  $h_s$  we have determined the values  $dp$  of this auxiliary table by taking half of the difference of (9B) and (9A) for  $h_s = 2000$  m. So we have used the formula

$$dp = \pm 0.3 (F_{T+4.45h+2} - F_{T+4.45h} - F_{T+2} + F_T) \dots (10)$$

The auxiliary tables cover a range of

- 0-6000 m for the zones A—J
- 1000-6000 m for the zones K and L
- 3000-6000 m for the zones M—O<sub>2</sub>

They have also been expressed in the unity of 0.1 mgal but they have been computed for one decimal place more, corresponding to 0.01 mgal, for guaranteeing the accuracy of 0.1 mgal when multiplying by a large value of  $h_s$ .

For the numbered zones 18—11, the tables give the combined value  $p'$  of the effect  $t$  of the topography and  $p$  of the compensation. So for these zones we had to add the figure for the effect of the topography to that given by formula (9A); for ensuring the accuracy of 0.1

mgal in the combined effect, each has been computed in 0.01 mgal. The tables have moreover been so arranged that the first column gives the full effect  $p'_0$  for local compensation but that the further columns give the difference  $p' - p'_0$  of the effect  $p'$  for this column and of  $p'_0$  of the first. As the effect for topography is the same in  $p'$  and in  $p'_0$  it is eliminated from the difference and so we can compute this difference directly by means of formula (9 A) from the differences  $\Delta$  of the values  $F$  of the corresponding column and  $F_0$  of the first column of the fundamental tables.

We derived the effect of the topography from the fundamental tables of Cassinis <sup>1)</sup>, which give the attraction  $f$  for a mass reaching from sea-level to an elevation  $h$ ; the sign of  $f$  and  $h$  is contrary to that adopted for  $F$  and  $H$  in the fundamental tables for regional reduction. For the computations of the effect of the topography we used the formulas

$$\text{for land-stations} \quad t = -2.67 f_h, \quad \dots \quad (11 A)$$

$$\text{for sea-stations} \quad t = -1.642 f_{1.626 h}, \quad \dots \quad (11 B)$$

For the auxiliary tables for these zones we had to add the corresponding effect of an elevation of the station of 1000 m on the effect of the topography. According to the adopted way of deriving it, we computed this effect by means of the formulas

$$\text{for land-stations} \quad dt = -1.335 (f_{h-2000} - f_{-2000}), \quad (12 A)$$

$$\text{for sea-stations} \quad dt = -0.821 (f_{1.926 h-2000} - f_{-2000}). \quad (12 B)$$

For the numbered zones 10, 9, 8 and 7 — 1 we have computed the tables in the same way but for the table values we have chosen round values of the HAYFORD correction  $L$  instead of round values of the topographical elevation  $h$ . These quantities are related by the following simple formulas; expressing  $h$  in  $m$  and  $L$  in 0.1 mgal we have for all the numbered zones:

$$\begin{array}{l} \text{Zones 18—11} \\ \text{zones 18, 17, 16, 15, 14 (appr.) } h = -30.48 L \\ \text{zone 13} \quad h = -19.05 L \\ \text{zone 12} \quad h = -30.48 L \\ \text{zone 11} \quad h = -38.10 L \end{array} \quad \left. \vphantom{\begin{array}{l} \text{Zones 18—11} \\ \text{zones 18, 17, 16, 15, 14 (appr.) } h = -30.48 L \\ \text{zone 13} \quad h = -19.05 L \\ \text{zone 12} \quad h = -30.48 L \\ \text{zone 11} \quad h = -38.10 L \end{array}} \right\} (13 A)$$

<sup>1)</sup> G. CASSINIS, P. DORE, S. BALLARIN, Tavole Fondamentali per la Riduzione dei valori osservati della gravità, Milano 1937.

<i>Zones 10—1</i>		
zone 10	$L = -0.0197 h$	}
zone 9	$L = -0.0131 h$	
zone 8	$L = -0.0131 h$	
zones 7—1	$L = -0.0272 h$	

(13 B)

We checked and corrected the values of our tables for these distant zones by means of the following formula, which corresponds to formula (1) of this paper

$$p' = \frac{l' + 2.725 h}{56.85 - 0.5 h} L. \dots \dots \dots (14)$$

The denominator in this formula gives the distance in km of the centres of gravity of the topography and the compensation according to HAYFORD's assumptions of isostasy <sup>1)</sup>.

The above schedule has been applied for the computation of the three sets of tables but for  $T = 20$  km and for  $T = 40$  km slight complications arose. For  $T = 20$  km the negative values of  $h$  of more than 3292 m bring about negative values for the thickness of the crust. This limit corresponds to a sea-depth of 5352 m and a compensation of a thickness of 14648 m and so their sum equals the total thickness of the crust; for larger depths the sum would exceed the thickness. For meeting this difficulty we have adopted the method indicated by HEISKANEN in his paper about new isostatic tables of 1938; we have assumed the compensation for greater depths to have the same dimensions but a so much larger density that the total compensating mass corresponds to isostatic equilibrium. We have neglected in the same way as he did for somewhat greater depths that the large values for the depth would thus still bring about small negative values for the crustal thickness. So, according to our assumption we have used the following formula for  $-h$  larger than 3300 m

$$p = - \frac{h}{3300} p_{3300} \dots \dots \dots (15)$$

where  $p_{3300}$  is the value of  $p$  for a value of  $h$  of  $-3300$  m and computed according to formula (9 A). The tables thus show a discontinuity for  $h = -3300$  m.

For  $T = 40$  km another complication arose. For values of  $h$  greater

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<sup>1)</sup> The compensation is assumed to reach from the Earth's surface downwards over 113.7 km.

than 4494 m the compensation reaches to a depth of more than 60 km and so we could no longer use the fundamental tables which do not give values of  $F$  for larger  $H$  than 60 km. We have met the difficulty by extrapolating the tables beyond this limit and we have based this extrapolation on the values of  $F$  for  $H = 40$  km, 50 km and 60 km, because these values have been directly computed while the other values of the tables have been interpolated. Indicating one tenth of the excess in km of  $T + 4.45 h$  above 60 km by  $x$  and putting

$$F_{60} - F_{50} = \Delta_{6.5} \quad F_{50} - F_{40} = \Delta_{5.4} \quad \dots \quad (16 A)$$

we have used the formula

$$F = F_{60} + b x + a x^2 \quad \dots \quad (16 B)$$

with

$$a = \frac{1}{2} (\Delta_{6.5} - \Delta_{5.4}) \quad \dots \quad (16 C)$$

and

$$b = \Delta_{6.5} + a.$$

The values of  $F_{40}$ ,  $F_{50}$  and  $F_{60}$  satisfy the equation (16 B).

The auxiliary tables show a slight discontinuity between  $h = 4000$  m and  $h = 5000$  m brought about by this extrapolation method.

For the construction of the curves of Plate I as described on page 6 e.s., we have computed the values  $K$  of the attraction in  $O$  of the compensation of a ring of mass of a radius  $r$  and a breadth of one kilometer. For these computations we have used the tables V of „Fundamental Tables for Regional Isostatic Reduction of Gravity Values, p 41 e.s. <sup>1)</sup>, which give the values of  $K$  for compensating masses of unit density in case of local compensation, and reaching for the successive columns from sea-level to 10 km, 20 km, 30 km, 40 km, 50 km and 60 km. So for the position of the compensating masses which we require for our curves, i.e. from 10—20 km, from 20—30 km, from 30—40 km and from 40—50 km, we have to take the differences of the values of the successive columns of these tables and as we require a density of 0.6 for the case of local compensation, we have to multiply these differences by 0.6. Each table gives us the values for one degree of regional spreading of the compensation.

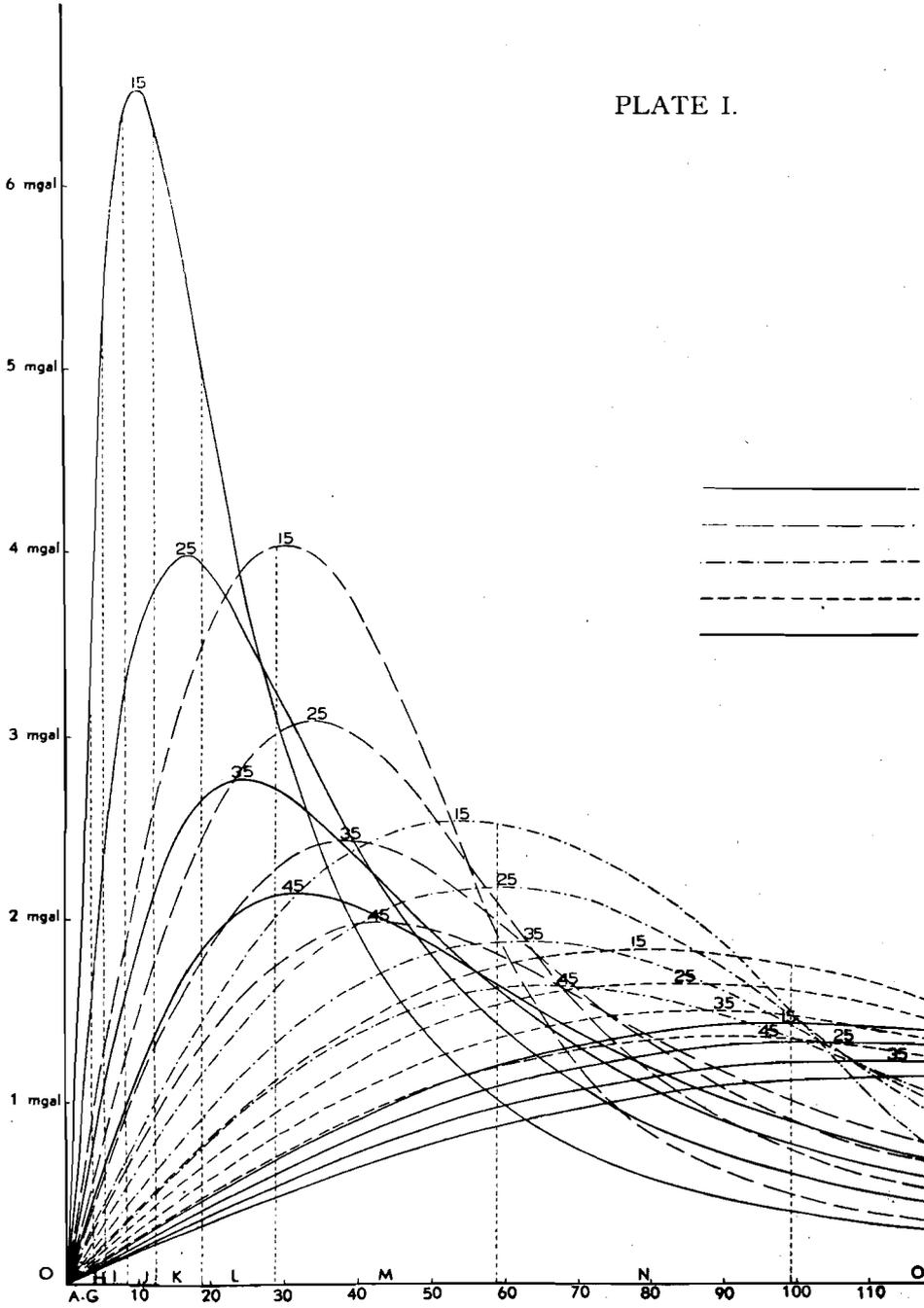
1) Verh. Acad. o. Sc. of Amsterdam, 1° Sect. DI XVII, 3.

There is, however, no table for local compensation, i.e. for  $R = 0$ , and so we had to derive the corresponding values in another way. We have done this by means of Table II of the same publication, p 37, which, if multiplied by the quantity  $M$  as given by formula (1 C), *ibid* p 11, gives directly the attraction of rings of mass reaching down to the same depths as those of Table V. So by multiplying by  $M$  and substituting a density of 0.6 and values of  $H$  of successively 10 km, 20 km, 30 km, 40 km and 50 km, we obtained the required table and we derived the values of  $K$  for our curves by taking the differences of the successive columns.

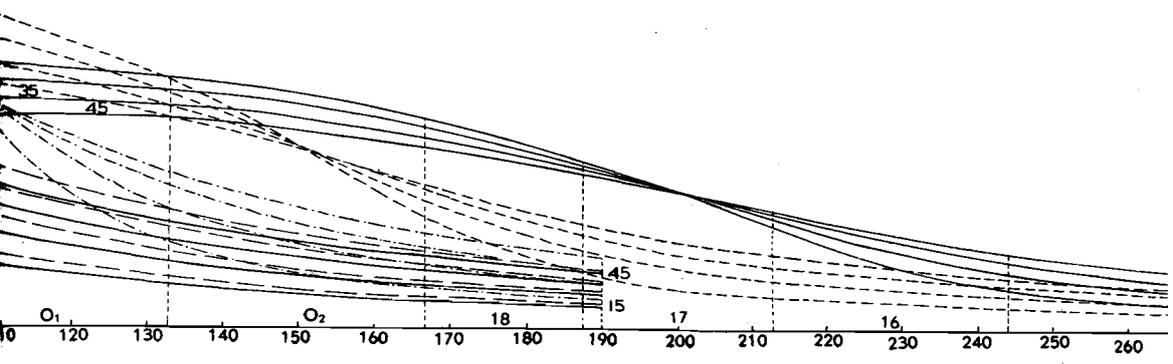
The values thus obtained for  $K$  were taken as ordinates for the curves of Plate I.

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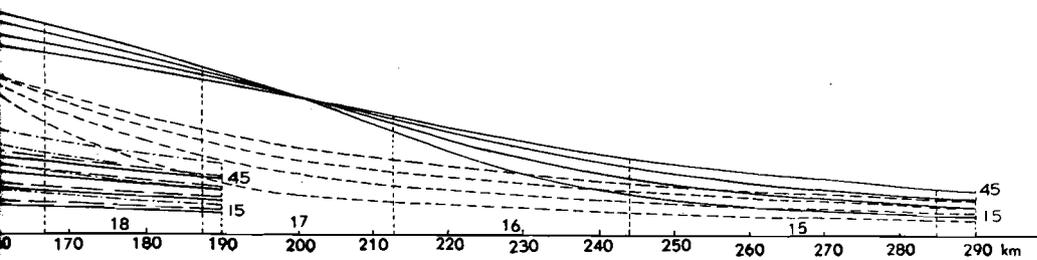
PLATE I.



—	Attraction of ring of mass of local compensation, $R = 0$ ,	$T = 15 \text{ km}, 25 \text{ km}$
- - -	" " " " " " regional "	, $R = 58.10 \text{ km}$ , " "
- - -	" " " " " " " "	, $R = 116.20 \text{ km}$ , " "
- - -	" " " " " " " "	, $R = 174.30 \text{ km}$ , " "
- - -	" " " " " " " "	, $R = 232.40 \text{ km}$ , " "



mass of local compensation, $R = 0$ ,	$T = 15$ km, 25 km, 35 km, 45 km
" " regional " , $R = 58.10$ km,	" " " "
" " " " , $R = 116.20$ km,	" " " "
" " " " , $R = 174.30$ km,	" " " "
" " " " , $R = 232.40$ km,	" " " "





**T A B L E S**  
 FOR  
**Regional and Local Isostatic Reduction (Airy system)**  
 FOR  
 GRAVITY VALUES.

Thickness of the crust for zero topography:

- 1st series of tables  $T = 20$  km,
- 2nd series of tables  $T = 30$  km,
- 3rd series of tables  $T = 40$  km,

density of the topography 2.67, of sea-water 1.028,

density of the compensation when not regionally distributed  $\pm 0.6$ ,

$h =$  elevation in m, negative  $h = 0.615 \times$  the sea-depth in m,

height of the column of compensation  $= 4.45 h$ ,

horizontal distribution of the compensation according to the curve of fig. 1,

$R =$  radius of the area of distribution,

$L =$  HAYFORD reduction in 0.1 mgal for the zones 10—1 (top.+comp.),

$p =$  effect of the compensation for the zones A—O in 0.1 mgal,

$p' =$  effect of the topography and the compensation for the zones 18—1 in 0.1 mgal;  $L$ ,  $p$  and  $p'$  have the sign of HAYFORD's tables,

$p_0$  and  $p_0' =$  the effects for  $R = 0$  (local compensation),

$p_1$  "  $p_1' =$  " " "  $R = 29.05$  km,

$p_2$  "  $p_2' =$  " " "  $R = 58.10$  km,

$p_4$  "  $p_4' =$  " " "  $R = 116.20$  km,

$p_8$  "  $p_8' =$  " " "  $R = 174.30$  km,

$p_8$  "  $p_8' =$  " " "  $R = 232.40$  km.

The columns of the differences  $\Delta$  of the table-values correspond to differences of elevation of 100 m.

The auxiliary tables ( $dp$  and  $dp'$  tables) for each zone up to zone 11 give the correction of  $p$  resp.  $p'$  for the elevation of the station above sea-level;  $dp$  and  $dp' =$  the correction per 1000 m elevation; the correction is practically proportional to the elevation.











ZONE K  
 $T = 20 \text{ km}$

$h$	$p_0$ $R = 0$		$p_1$ $R = 29.05$		$p_2$ $R = 58.10$		$p_4$ $R = 116.20$		$p_8$ $R = 174.30$		$p_{16}$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 472	4.4	- 409	4.0	- 204	2.2	- 140	1.8	- 81	1.2	- 52	0.8
+ 5500	- 450	4.8	- 389	4.2	- 193	2.4	- 131	2.0	- 75	1.2	- 48	0.6
+ 5000	- 426	5.4	- 368	4.8	- 181	2.6	- 121	2.0	- 69	1.2	- 45	0.8
+ 4500	- 399	5.8	- 344	5.2	- 168	2.8	- 111	2.0	- 63	1.2	- 41	0.8
+ 4000	- 370	6.4	- 318	5.6	- 154	3.0	- 101	2.2	- 57	1.2	- 37	0.8
+ 3500	- 338	7.0	- 290	6.2	- 139	3.0	- 90	2.2	- 51	1.2	- 33	1.0
+ 3000	- 303	7.6	- 259	6.6	- 124	3.4	- 79	2.2	- 45	1.4	- 28	0.8
+ 2500	- 265	8.6	- 226	7.2	- 107	3.6	- 68	2.4	- 38	1.4	- 24	1.0
+ 2000	- 222	9.4	- 190	8.2	- 89	4.0	- 56	2.6	- 31	1.6	- 19	0.8
+ 1500	- 175	10.6	- 149	9.0	- 69	4.2	- 43	2.8	- 23	1.4	- 15	1.0
+ 1000	- 122	11.6	- 104	9.8	- 48	4.6	- 29	2.8	- 16	1.6	- 10	1.0
+ 500	- 64	12.8	- 55	11.0	- 25	5.0	- 15	3.0	- 8	1.6	- 5	1.0
0	0	14.2	0	12.4	0	5.6	0	3.2	0	1.6	0	1.0
- 500	+ 72	15.4	+ 62	13.6	+ 28	6.2	+ 16	3.2	+ 8	1.8	+ 5	1.2
- 1000	+ 149	16.6	+ 130	15.4	+ 59	6.6	+ 32	3.6	+ 17	1.8	+ 11	1.0
- 1500	+ 232	17.6	+ 207	17.4	+ 92	7.4	+ 50	3.8	+ 26	2.0	+ 16	1.2
- 2000	+ 320	17.6	+ 294	19.8	+ 129	8.0	+ 69	3.8	+ 36	2.0	+ 22	1.0
- 2500	+ 408	16.6	+ 393	22.4	+ 169	8.8	+ 88	4.2	+ 46	2.0	+ 27	1.2
- 3000	+ 491	16.0	+ 505	22.6	+ 213	8.6	+ 109	4.4	+ 56	2.2	+ 33	1.2
- 3500	+ 571	16.0	+ 618	17.6	+ 256	7.2	+ 131	3.8	+ 67	1.8	+ 39	1.2
- 4000	+ 651	16.0	+ 705	17.6	+ 292	7.2	+ 150	3.6	+ 76	1.8	+ 45	1.2
- 4500	+ 731	16.0	+ 792	17.6	+ 328	7.4	+ 168	3.8	+ 85	1.8	+ 51	1.2
- 5000	+ 811	16.0	+ 879	17.6	+ 365	7.4	+ 187	3.8	+ 94	1.8	+ 56	1.0

## CORRECTION FOR ELEVATION OF STATION.

$dp = \text{correction per 1000 m elevation.}$

$h$	$dp_0$	$dp_1$	$dp_2$	$dp_4$	$dp_8$	$dp_{16}$
m						
+ 6000	+ 19.8	+ 16.6	+ 6.7	+ 2.9	+ 1.3	+ 0.6
+ 5000	+ 18.1	+ 15.1	+ 5.9	+ 2.5	+ 1.1	+ 0.5
+ 4000	+ 16.0	+ 13.1	+ 5.1	+ 2.1	+ 0.9	+ 0.5
+ 3000	+ 13.3	+ 11.1	+ 4.3	+ 1.7	+ 0.7	+ 0.4
+ 2000	+ 9.8	+ 8.3	+ 3.2	+ 1.2	+ 0.5	+ 0.2
+ 1000	+ 5.4	+ 4.6	+ 1.8	+ 0.6	+ 0.3	+ 0.1
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	- 5.9	- 6.2	- 2.5	- 0.8	- 0.3	- 0.1

## ZONE L

 $T = 20 \text{ km}$ 

$h$	$P_0$ $R = 0$		$P_1$ $R = 29.05$		$P_2$ $R = 58.10$		$P_4$ $R = 116.20$		$P_6$ $R = 174.30$		$P_8$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 772		- 747		- 670		- 316		- 187		- 123	
		8.6		8.2		7.8		4.2		2.6		1.8
+ 5500	- 729		- 706		- 631		- 295		- 174		- 114	
		9.4		8.8		8.0		4.2		2.6		1.8
+ 5000	- 682		- 662		- 591		- 274		- 161		- 105	
		10.0		9.2		8.6		4.4		2.8		1.8
+ 4500	- 632		- 616		- 548		- 252		- 147		- 96	
		10.8		10.0		9.4		4.8		2.8		2.0
+ 4000	- 578		- 566		- 501		- 228		- 133		- 86	
		11.4		10.8		9.8		4.8		3.0		2.0
+ 3500	- 521		- 512		- 452		- 204		- 118		- 76	
		12.4		11.6		10.4		5.0		3.0		2.0
+ 3000	- 459		- 454		- 400		- 179		- 103		- 66	
		13.0		12.4		11.2		5.4		3.0		2.0
+ 2500	- 394		- 392		- 344		- 152		- 88		- 56	
		14.0		13.4		11.8		5.4		3.4		2.0
+ 2000	- 324		- 325		- 285		- 125		- 71		- 46	
		15.0		14.6		12.8		5.8		3.4		2.2
+ 1500	- 249		- 252		- 221		- 96		- 54		- 35	
		15.8		15.6		13.8		6.2		3.4		2.4
+ 1000	- 170		- 174		- 152		- 65		- 37		- 23	
		16.6		16.8		14.6		6.2		3.6		2.2
+ 500	- 87		- 90		- 79		- 34		- 19		- 12	
		17.4		18.0		15.8		6.8		3.8		2.4
0	0		0		0		0		0		0	
- 500	+ 90		+ 98		+ 85		+ 35		+ 19		+ 12	
		18.0		19.6		17.0		7.0		3.8		2.4
- 1000	+ 180		+ 202		+ 177		+ 72		+ 39		+ 24	
		18.0		20.8		18.4		7.4		4.0		2.4
- 1500	+ 271		+ 314		+ 276		+ 111		+ 60		+ 37	
		18.2		22.4		19.8		7.8		4.2		2.6
- 2000	+ 357		+ 432		+ 382		+ 152		+ 82		+ 50	
		17.2		23.6		21.2		8.2		4.4		2.6
- 2500	+ 436		+ 558		+ 498		+ 196		+ 105		+ 64	
		15.8		25.2		23.2		8.8		4.6		2.8
- 3000	+ 504		+ 689		+ 623		+ 242		+ 128		+ 78	
		13.6		26.2		25.0		9.2		4.6		2.8
- 3500	+ 573		+ 823		+ 750		+ 289		+ 153		+ 93	
		13.8		26.8		25.4		9.4		5.0		3.0
- 4000	+ 654		+ 938		+ 855		+ 330		+ 174		+ 106	
		16.2		23.0		21.0		8.2		4.2		2.6
- 4500	+ 735		+ 1054		+ 961		+ 370		+ 196		+ 119	
		16.2		23.2		21.2		8.0		4.4		2.6
- 5000	+ 815		+ 1169		+ 1066		+ 411		+ 217		+ 132	
		16.0		23.0		21.0		8.2		4.2		2.6

## CORRECTION FOR ELEVATION OF STATION.

 $d_p = \text{correction per 1000 m elevation.}$ 

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_6}$	$d_{p_8}$
m						
+ 6000	+ 20.7	+ 23.3	+ 19.3	+ 6.3	+ 2.9	+ 1.5
+ 5000	+ 18.0	+ 20.9	+ 17.3	+ 5.5	+ 2.5	+ 1.3
+ 4000	+ 14.9	+ 18.2	+ 14.9	+ 4.6	+ 2.1	+ 1.1
+ 3000	+ 11.4	+ 14.6	+ 12.1	+ 3.7	+ 1.6	+ 0.9
+ 2000	+ 7.5	+ 10.4	+ 8.7	+ 2.6	+ 1.1	+ 0.6
+ 1000	+ 3.5	+ 5.5	+ 4.8	+ 1.4	+ 0.6	+ 0.3
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	- 1.7	- 6.5	- 5.7	- 1.6	- 0.6	- 0.2

ZONE M  
 $T = 20 \text{ km}$

$h$	$P_0$		$P_1$		$P_2$		$P_4$		$P_6$		$P_8$	
	$R = 0$	$\Delta$	$R = 29.05$	$\Delta$	$R = 58.10$	$\Delta$	$R = 116.20$	$\Delta$	$R = 174.30$	$\Delta$	$R = 232.40$	$\Delta$
+ 6000	-1713	25.8	-1819	26.0	-1905	25.2	-1391	18.6	- 911	11.6	- 625	9.0
+ 5500	-1584	26.6	-1689	27.0	-1779	26.0	-1298	19.4	- 853	13.2	- 580	9.2
+ 5000	-1451	27.4	-1554	28.2	-1649	27.2	-1201	19.8	- 787	13.6	- 534	9.4
+ 4500	-1314	28.2	-1413	29.8	-1513	28.6	-1102	20.8	- 719	14.2	- 487	9.8
+ 4000	-1173	28.6	-1264	30.6	-1370	29.8	- 998	21.8	- 648	14.4	- 438	10.0
+ 3500	-1030	29.2	-1111	31.0	-1221	30.8	- 889	22.4	- 576	15.0	- 388	10.2
+ 3000	- 884	29.6	- 956	31.6	-1067	32.0	- 777	23.2	- 501	15.4	- 337	10.4
+ 2500	- 736	30.0	- 798	31.8	- 907	33.6	- 661	24.4	- 424	15.8	- 285	10.8
+ 2000	- 586	29.8	- 639	32.0	- 739	34.8	- 539	25.4	- 345	16.4	- 231	11.2
+ 1500	- 437	29.8	- 479	32.2	- 565	36.2	- 412	26.4	- 263	17.0	- 175	11.4
+ 1000	- 288	29.0	- 318	31.8	- 384	37.6	- 280	27.4	- 178	17.6	- 118	11.6
+ 500	- 143	28.6	- 159	31.8	- 196	39.2	- 143	28.6	- 90	18.0	- 60	12.0
0	0	27.4	0	31.8	0	40.8	0	29.8	0	18.8	0	12.2
- 500	+ 137	25.4	+ 159	31.6	+ 204	42.4	+ 149	30.8	+ 94	19.2	+ 61	12.6
-1000	+ 264	23.8	+ 317	30.4	+ 416	44.0	+ 303	32.0	+ 190	19.8	+ 124	12.8
-1500	+ 383	21.0	+ 469	28.6	+ 636	45.4	+ 463	33.4	+ 289	20.6	+ 188	13.2
-2000	+ 488	18.2	+ 612	25.8	+ 863	47.0	+ 630	34.8	+ 392	21.2	+ 254	13.6
-2500	+ 579	14.6	+ 741	21.8	+1098	48.0	+ 804	36.2	+ 498	22.2	+ 322	14.2
-3000	+ 652	16.2	+ 850	23.2	+1338	49.6	+ 985	37.4	+ 609	22.8	+ 393	14.6
-3500	+ 733	20.6	+ 966	27.2	+1586	44.4	+1172	32.8	+ 723	20.2	+ 466	13.0
-4000	+ 836	20.6	+1102	27.2	+1808	44.6	+1336	33.0	+ 824	20.4	+ 531	13.2
-4500	+ 939	20.6	+1238	27.0	+2031	44.6	+1501	33.0	+ 926	20.4	+ 597	13.0
-5000	+1042	20.6	+1373	27.0	+2254	44.6	+1666	33.0	+1028	20.4	+ 662	13.0

## CORRECTION FOR ELEVATION OF STATION.

$dp = \text{correction per 1000 m elevation.}$

$h$	$d_{P_0}$	$d_{P_1}$	$d_{P_2}$	$d_{P_4}$	$d_{P_6}$	$d_{P_8}$
m						
+ 6000	+ 7.4	+ 15.3	+ 34.0	+ 23.9	+ 12.7	+ 7.2
+ 5000	+ 3.8	+ 10.1	+ 29.3	+ 20.9	+ 10.9	+ 6.2
+ 4000	+ 0.6	+ 4.4	+ 24.0	+ 17.7	+ 9.0	+ 5.1
+ 3000	- 2.0	+ 1.1	+ 18.6	+ 13.8	+ 7.1	+ 3.9
+ 2000	- 3.3	- 0.6	+ 12.8	+ 9.6	+ 4.8	+ 2.6
+ 1000	- 2.9	- 1.0	+ 6.6	+ 5.0	+ 2.5	+ 1.4
0	0.0	0.0	0.0	0.0	0.0	0.0
-1000	+ 6.3	+ 0.2	- 7.3	- 5.0	- 2.7	- 1.1
-2000	+ 16.7	+ 7.1	-14.2	-10.8	- 5.6	- 2.8
-3000	+ 31.2	+ 22.2	-20.3	-17.4	- 9.2	- 5.0

## ZONE N

 $T = 20 \text{ km}$ 

$h$	$P_0$ $R = 0$		$P_1$ $R = 29.05$		$P_2$ $R = 58.10$		$P_4$ $R = 116.20$		$P_6$ $R = 174.30$		$P_8$ $R = 232.40$	
	$m$	$\Delta$	$m$	$\Delta$	$m$	$\Delta$	$m$	$\Delta$	$m$	$\Delta$	$m$	$\Delta$
+ 6000	-1148	22.0	-1214	22.8	-1432	24.8	-1885	27.6	-1582	23.2	-1217	18.0
+ 5500	-1038	21.6	-1100	22.6	-1308	24.8	-1747	28.0	-1466	23.4	-1127	18.2
+ 5000	- 930	21.2	- 987	22.2	-1184	24.8	-1607	28.6	-1349	24.2	-1036	18.6
+ 4500	- 824	21.0	- 876	22.0	-1060	25.0	-1464	29.4	-1228	24.8	- 943	19.2
+ 4000	- 719	20.6	- 766	21.6	- 935	24.8	-1317	30.4	-1104	25.4	- 847	19.6
+ 3500	- 616	19.8	- 658	21.2	- 811	24.6	-1165	30.8	- 977	25.8	- 749	20.0
+ 3000	- 517	19.4	- 552	20.4	- 688	24.2	-1011	31.6	- 848	26.6	- 649	20.4
+ 2500	- 420	18.6	- 450	19.8	- 567	24.0	- 853	32.6	- 715	27.2	- 547	21.0
+ 2000	- 327	17.8	- 351	19.0	- 447	23.4	- 690	33.2	- 579	28.0	- 442	21.4
+ 1500	- 238	17.0	- 256	18.2	- 330	22.8	- 524	34.2	- 439	28.6	- 335	21.8
+ 1000	- 153	15.8	- 165	17.0	- 216	22.0	- 353	34.8	- 296	29.2	- 226	22.4
+ 500	- 74	14.8	- 80	16.0	- 106	21.2	- 179	35.8	- 150	30.0	- 114	22.8
0	0	13.6	0	14.8	0	20.0	0	36.6	0	30.8	0	23.2
- 500	+ 68	12.2	+ 74	13.2	+ 100	18.6	+ 183	37.2	+ 154	31.2	+ 116	23.6
-1000	+ 129	10.8	+ 140	12.0	+ 193	17.2	+ 369	38.2	+ 310	32.2	+ 234	24.0
-1500	+ 183	9.4	+ 200	10.4	+ 279	15.2	+ 560	38.8	+ 471	33.0	+ 354	24.6
-2000	+ 230	7.8	+ 252	8.6	+ 355	13.2	+ 754	40.0	+ 636	33.8	+ 477	25.4
-2500	+ 269	6.2	+ 295	7.0	+ 421	10.8	+ 954	40.8	+ 805	34.4	+ 604	26.0
-3000	+ 300	7.2	+ 330	7.8	+ 475	12.2	+1158	42.2	+ 977	35.8	+ 734	27.0
-3500	+ 336	9.6	+ 369	10.4	+ 536	15.0	+1369	38.6	+1156	32.4	+ 869	24.4
-4000	+ 384	9.4	+ 421	10.4	+ 611	15.0	+1562	38.6	+1318	32.6	+ 991	24.4
-4500	+ 431	9.4	+ 473	10.4	+ 686	15.2	+1755	38.4	+1481	32.6	+1113	24.4
-5000	+ 478		+ 525		+ 762		+1947		+1644		+1235	

## CORRECTION FOR ELEVATION OF STATION.

 $dp = \text{correction per 1000 m elevation.}$ 

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_6}$	$d_{p_8}$
$m$						
+ 6000	- 16.4	- 15.5	- 8.1	+ 20.1	+ 16.9	+ 11.8
+ 5000	- 15.5	- 14.9	- 8.6	+ 17.3	+ 14.4	+ 10.1
+ 4000	- 14.0	- 13.6	- 8.6	+ 14.2	+ 11.7	+ 8.3
+ 3000	- 11.8	- 11.6	- 8.0	+ 10.8	+ 9.0	+ 6.3
+ 2000	- 8.7	- 8.6	- 6.5	+ 7.3	+ 6.1	+ 4.2
+ 1000	- 4.8	- 4.8	- 4.0	+ 3.7	+ 3.1	+ 2.1
0	0.0	0.0	0.0	0.0	0.0	0.0
-1000	+ 5.7	+ 5.9	+ 5.5	- 3.4	- 3.2	- 1.7
-2000	+ 12.1	+ 12.7	+ 13.1	- 7.3	- 6.6	- 4.1
-3000	+ 19.2	+ 20.3	+ 23.0	- 11.6	- 10.4	- 7.4

ZONE O<sub>1</sub>  
T = 20 km

h	P <sub>0</sub> R = 0		P <sub>1</sub> R = 29.05		P <sub>2</sub> R = 58.10		P <sub>4</sub> R = 116.20		P <sub>6</sub> R = 174.30		P <sub>8</sub> R = 232.40	
	m	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
+ 6000	- 515		- 531		- 587		- 944		-1231		-1106	
+ 5500	- 461	10.8	- 476	11.0	- 528	11.8	- 863	16.2	-1137	18.8	-1022	16.8
+ 5000	- 409	10.4	- 423	10.6	- 470	11.6	- 782	16.2	-1043	18.8	- 937	17.0
+ 4500	- 359	10.0	- 371	10.4	- 414	11.2	- 701	16.2	- 947	19.2	- 850	17.4
+ 4000	- 310	9.8	- 321	10.0	- 359	11.0	- 620	16.2	- 849	19.6	- 762	17.6
+ 3500	- 264	9.2	- 273	9.6	- 306	10.6	- 540	16.0	- 749	20.0	- 672	18.0
+ 3000	- 219	9.0	- 227	9.2	- 255	10.2	- 460	16.0	- 647	20.4	- 580	18.4
+ 2500	- 177	8.4	- 183	8.8	- 206	9.8	- 380	16.0	- 544	20.6	- 488	18.4
+ 2000	- 137	8.0	- 142	8.2	- 159	9.4	- 302	15.6	- 439	21.0	- 393	19.0
+ 1500	- 99	7.6	- 102	8.0	- 116	8.6	- 224	15.6	- 332	21.4	- 297	19.2
+ 1000	- 63	7.2	- 66	7.2	- 74	8.4	- 148	15.2	- 223	21.8	- 200	19.4
+ 500	- 30	6.6	- 32	6.8	- 36	7.6	- 73	15.0	- 113	22.0	- 101	19.8
0	0	6.0	0	6.4	0	7.2	0	14.6	0	22.6	0	20.2
- 500	+ 27	5.4	+ 29	5.8	+ 33	6.6	+ 71	14.2	+ 114	22.8	+ 102	20.4
- 1000	+ 52	5.0	+ 54	5.0	+ 62	5.8	+ 140	13.8	+ 230	23.2	+ 205	20.6
- 1500	+ 74	4.4	+ 77	4.6	+ 87	5.0	+ 206	13.2	+ 347	23.4	+ 309	20.8
- 2000	+ 93	3.8	+ 96	3.8	+ 109	4.4	+ 268	12.4	+ 466	23.8	+ 415	21.2
- 2500	+ 108	3.0	+ 112	3.2	+ 128	3.8	+ 326	11.6	+ 588	24.4	+ 523	21.6
- 3000	+ 121	2.6	+ 125	2.6	+ 142	2.8	+ 379	10.6	+ 712	24.8	+ 634	22.2
- 3500	+ 135	2.8	+ 140	3.0	+ 160	3.6	+ 436	11.4	+ 841	25.8	+ 749	23.0
- 4000	+ 154	3.8	+ 160	4.0	+ 182	4.4	+ 498	12.4	+ 959	23.6	+ 854	21.0
- 4500	+ 173	3.8	+ 180	4.0	+ 204	4.4	+ 559	12.2	+1077	23.6	+ 959	21.0
- 5000	+ 192	3.8	+ 200	4.0	+ 227	4.6	+ 620	12.2	+1195	23.6	+1065	21.2

## CORRECTION FOR ELEVATION OF STATION.

*dp* = correction per 1000 m elevation.

h	d <sub>P0</sub>	d <sub>P1</sub>	d <sub>P2</sub>	d <sub>P4</sub>	d <sub>P6</sub>	d <sub>P8</sub>
m						
+ 6000	- 11.0	- 11.2	- 11.3	- 3.7	+ 9.2	+ 8.0
+ 5000	- 9.8	- 9.9	- 10.0	- 3.7	+ 8.0	+ 6.8
+ 4000	- 8.2	- 8.4	- 8.5	- 3.5	+ 6.6	+ 5.6
+ 3000	- 6.5	- 6.6	- 6.9	- 3.2	+ 5.0	+ 4.2
+ 2000	- 4.5	- 4.6	- 4.8	- 2.6	+ 3.4	+ 2.8
+ 1000	- 2.3	- 2.4	- 2.5	- 1.5	+ 1.7	+ 1.4
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	+ 2.5	+ 2.6	+ 3.0	+ 2.0	- 1.3	- 1.0
- 2000	+ 5.2	+ 5.4	+ 6.2	+ 4.9	- 3.1	- 2.5
- 3000	+ 8.0	+ 8.3	+ 9.5	+ 8.9	- 5.9	- 4.6

ZONE O<sub>2</sub>  
T = 20 km

h	P <sub>0</sub> R = 0		P <sub>1</sub> R = 29.05		P <sub>2</sub> R = 58.10		P <sub>4</sub> R = 116.20		P <sub>6</sub> R = 174.30		P <sub>8</sub> R = 232.40	
		Δ		Δ		Δ		Δ		Δ		Δ
m												
+ 6000	- 330	7.0	- 337	7.2	- 363	7.8	- 490	9.8	- 869	14.2	-1011	15.6
+ 5500	- 295	6.8	- 301	7.0	- 324	7.4	- 441	9.6	- 798	14.4	- 933	15.8
+ 5000	- 261	6.6	- 266	6.6	- 287	7.2	- 393	9.4	- 726	14.2	- 854	16.0
+ 4500	- 228	6.2	- 233	6.4	- 251	7.0	- 346	9.0	- 655	14.4	- 774	16.2
+ 4000	- 197	6.0	- 201	6.2	- 216	6.6	- 301	8.8	- 583	14.6	- 693	16.6
+ 3500	- 167	5.8	- 170	5.8	- 183	6.2	- 257	8.4	- 510	14.6	- 610	16.6
+ 3000	- 138	5.4	- 141	5.4	- 152	6.0	- 215	8.0	- 437	14.4	- 527	17.0
+ 2500	- 111	5.0	- 114	5.2	- 122	5.6	- 175	7.8	- 365	14.6	- 442	17.2
+ 2000	- 86	4.8	- 88	5.0	- 94	5.2	- 136	7.4	- 292	14.6	- 356	17.4
+ 1500	- 62	4.4	- 63	4.6	- 68	5.0	- 99	7.0	- 219	14.6	- 269	17.8
+ 1000	- 40	4.2	- 40	4.2	- 43	4.4	- 64	6.6	- 146	14.6	- 180	17.8
+ 500	- 19	3.8	- 19	3.8	- 21	4.2	- 31	6.2	- 73	14.6	- 91	18.2
0	0	3.4	0	3.6	0	3.8	0	5.6	0	14.6	0	18.2
- 500	+ 17	3.2	+ 18	3.0	+ 19	3.4	+ 28	5.2	+ 73	14.4	+ 91	18.4
- 1000	+ 33	2.6	+ 33	2.8	+ 36	3.0	+ 54	4.4	+ 145	14.6	+ 183	18.8
- 1500	+ 46	2.4	+ 47	2.4	+ 51	2.6	+ 76	3.8	+ 218	14.4	+ 277	18.6
- 2000	+ 58	2.0	+ 59	2.2	+ 64	2.2	+ 95	3.2	+ 290	14.4	+ 370	19.2
- 2500	+ 68	1.6	+ 70	1.6	+ 75	1.6	+ 111	2.6	+ 362	14.4	+ 466	19.6
- 3000	+ 76	1.8	+ 78	1.8	+ 83	2.2	+ 124	3.0	+ 434	15.0	+ 564	20.4
- 3500	+ 85	2.4	+ 87	2.6	+ 94	2.6	+ 139	4.0	+ 509	14.2	+ 666	18.6
- 4000	+ 97	2.4	+ 100	2.4	+ 107	2.6	+ 159	3.8	+ 580	14.4	+ 759	18.8
- 4500	+ 109	2.4	+ 112	2.4	+ 120	2.6	+ 178	4.0	+ 652	14.2	+ 853	18.8
- 5000	+ 121	2.4	+ 124	2.4	+ 133	2.6	+ 198	4.0	+ 723	14.2	+ 947	18.8

## CORRECTION FOR ELEVATION OF STATION.

*dp* = correction per 1000 m elevation.

h	d <sub>P<sub>0</sub></sub>	d <sub>P<sub>1</sub></sub>	d <sub>P<sub>2</sub></sub>	d <sub>P<sub>4</sub></sub>	d <sub>P<sub>6</sub></sub>	d <sub>P<sub>8</sub></sub>
m						
+ 6000	- 7.8	- 8.0	- 8.6	- 8.7	+ 1.1	+ 5.9
+ 5000	- 6.8	- 6.9	- 7.5	- 7.7	+ 0.7	+ 5.3
+ 4000	- 5.6	- 5.7	- 6.4	- 6.5	+ 0.3	+ 4.3
+ 3000	- 4.3	- 4.4	- 4.9	- 5.1	+ 0.1	+ 3.2
+ 2000	- 3.0	- 3.0	- 3.4	- 3.6	0.0	+ 2.1
+ 1000	- 1.5	- 1.6	- 1.7	- 1.9	- 0.1	+ 1.0
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	+ 1.6	+ 1.6	+ 1.7	+ 2.5	+ 0.2	- 0.5
- 2000	+ 3.2	+ 3.3	+ 3.4	+ 5.2	+ 0.3	- 1.6
- 3000	+ 4.9	+ 5.0	+ 5.3	+ 8.0	+ 0.4	- 3.2

ZONE 18  
 $T = 20 \text{ km}$

$h$	$p_0'$ $R = 0$		$p_1' - p_0'$ $R = 29.05$		$p_2' - p_0'$ $R = 58.10$		$p_4' - p_0'$ $R = 116.20$		$p_6' - p_0'$ $R = 174.30$		$p_8' - p_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
+ 6000	- 152	3.3	- 2	0.0	- 9	0.2	- 51	1.0	- 189	2.9	- 374	2.5
+ 5000	- 119	3.1	- 2	0.1	- 7	0.1	- 41	0.9	- 160	3.4	- 322	5.6
+ 4000	- 88	2.7	- 1	0.0	- 6	0.2	- 32	0.9	- 126	3.4	- 266	6.0
+ 3000	- 61	2.4	- 1	0.0	- 4	0.2	- 23	0.9	- 92	3.3	- 206	6.4
+ 2000	- 37	2.0	- 1	0.1	- 2	0.1	- 14	0.7	- 59	3.0	- 142	6.9
+ 1000	- 17	1.7	0	0.0	- 1	0.1	- 7	0.7	- 29	2.9	- 73	7.3
0	0	1.3	0	0.0	0	0.1	0	0.5	0	2.7	0	7.8
- 1000	+ 13	0.7	0	0.0	+ 1	0.1	+ 5	0.5	+ 27	2.7	+ 78	8.2
- 2000	+ 20	0.4	0	0.1	+ 2	0.0	+ 10	0.2	+ 54	2.2	+ 160	8.8
- 3000	+ 24	0.4	+ 1	0.0	+ 2	0.1	+ 12	0.4	+ 76	2.4	+ 248	8.8
- 4000	+ 28	0.4	+ 1	0.0	+ 3	0.1	+ 16	0.4	+ 100	2.4	+ 336	8.3
- 5000	+ 32		+ 1	0.0	+ 4	0.1	+ 20		+ 124		+ 419	

## CORRECTION FOR ELEVATION OF STATION.

$dp' = \text{correction per } 1000 \text{ m elevation.}$

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000	+ 0.7	0.0	- 0.2	- 0.8	+ 0.1	+ 5.9
+ 3000	+ 0.2	- 0.0	- 0.1	- 0.6	- 1.3	+ 3.1
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.1	0.0	+ 0.1	+ 0.8	+ 1.6	- 3.5

## ZONE 17

 $T = 20 \text{ km}$ 

$h$	$p_0'$ $R = 0$		$p_1' - p_0'$ $R = 29.05$		$p_2' - p_0'$ $R = 58.10$		$p_4' - p_0'$ $R = 116.20$		$p_6' - p_0'$ $R = 174.30$		$p_8' - p_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 147	3.3	- 2	0.1	- 7	0.1	- 35	0.7	- 117	2.1	- 342	5.0
+ 5000	- 114	3.0	- 1	0.0	- 6	0.2	- 28	0.7	- 96	2.1	- 292	5.3
+ 4000	- 84	2.6	- 1	0.0	- 4	0.1	- 21	0.6	- 75	2.0	- 239	5.6
+ 3000	- 58	2.3	- 1	0.0	- 3	0.1	- 15	0.6	- 55	2.0	- 183	5.8
+ 2000	- 35	1.9	- 1	0.1	- 2	0.1	- 9	0.5	- 35	1.8	- 125	6.1
+ 1000	- 16	1.6	0	0.0	- 1	0.1	- 4	0.4	- 17	1.7	- 64	6.4
0	0	1.2	0	0.0	0	0.1	0	0.4	0	1.4	0	6.6
- 1000	+ 12	0.8	0	0.0	+ 1	0.0	+ 4	0.2	+ 14	1.1	+ 66	6.9
- 2000	+ 20	0.3	0	0.0	+ 1	0.1	+ 6	0.2	+ 25	0.8	+ 135	7.2
- 3000	+ 23	0.4	0	0.1	+ 2	0.0	+ 8	0.2	+ 33	0.8	+ 207	7.2
- 4000	+ 27	0.3	+ 1	0.0	+ 2	0.1	+ 10	0.3	+ 41	1.1	+ 279	6.9
- 5000	+ 30		+ 1		+ 3		+ 13		+ 52		+ 348	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000	+ 0.7	0.0	- 0.2	- 0.8	- 1.2	+ 3.8
+ 3000	+ 0.2	0.0	- 0.1	- 0.4	- 0.8	+ 1.8
0	0.0	0.0	0.0	0.0	- 0.0	0.0
- 3000	+ 0.1	0.0	+ 0.1	+ 0.6	+ 2.2	- 2.0

## ZONE 16

 $T = 20 \text{ km}$ 

$h$	$p_0'$ $R = 0$	$p_1' - p_0'$ $R = 29.05$	$p_2' - p_0'$ $R = 58.10$	$p_4' - p_0'$ $R = 116.20$	$p_6' - p_0'$ $R = 174.30$	$p_8' - p_0'$ $R = 232.40$						
m	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$						
+ 6000	- 142	3.2	- 1	0.0	- 5	0.1	- 23	0.4	- 74	1.4	- 247	4.1
+ 5000	- 110	2.9	- 1	0.0	- 4	0.1	- 19	0.5	- 60	1.4	- 206	4.1
+ 4000	- 81	2.5	- 1	0.0	- 3	0.1	- 14	0.4	- 46	1.4	- 165	4.2
+ 3000	- 56	2.3	- 1	0.1	- 2	0.1	- 10	0.4	- 32	1.2	- 123	4.1
+ 2000	- 33	1.8	0	0.0	- 1	0.0	- 6	0.3	- 20	1.1	- 82	4.2
+ 1000	- 15	1.5	0	0.0	- 1	0.1	- 3	0.3	- 9	0.9	- 40	4.0
0	0	1.1	0	0.0	0	0.1	0	0.2	0	0.8	0	3.9
- 1000	+ 11	0.8	0	0.0	+ 1	0.0	+ 2	0.2	+ 8	0.6	+ 39	3.6
- 2000	+ 19	0.3	0	0.0	+ 1	0.0	+ 4	0.2	+ 14	0.4	+ 75	3.3
- 3000	+ 22	0.4	0	0.0	+ 1	0.1	+ 6	0.1	+ 18	0.5	+ 108	3.4
- 4000	+ 26	0.3	0	0.0	+ 2	0.0	+ 7	0.2	+ 23	0.6	+ 142	3.5
- 5000	+ 29		0		+ 2		+ 9		+ 29		+ 177	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000	+ 0.4	0.0	- 0.1	- 0.5	- 1.3	- 0.1
+ 3000	+ 0.1	0.0	- 0.1	- 0.3	- 0.9	- 0.4
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	0.0	+ 0.1	+ 0.1	+ 0.4	+ 1.2	+ 1.8

## ZONE 15

 $T = 20 \text{ km}$ 

$h$	$p_0'$ $R = 0$		$p_1' - p_0'$ $R = 29.05$		$p_2' - p_0'$ $R = 58.10$		$p_4' - p_0'$ $R = 116.20$		$p_6' - p_0'$ $R = 174.30$		$p_8' - p_0'$ $R = 232.40$	
	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$
m												
+ 6000	- 138	3.2	- 1	0.0	- 4	0.0	- 17	0.3	- 58	1.1	- 134	2.6
+ 5000	- 106	2.8	- 1	0.0	- 4	0.2	- 14	0.4	- 47	1.2	- 108	2.5
+ 4000	- 78	2.4	- 1	0.1	- 2	0.0	- 10	0.3	- 35	1.0	- 83	2.3
+ 3000	- 54	2.2	0	0.0	- 2	0.1	- 7	0.2	- 25	1.0	- 60	2.2
+ 2000	- 32	1.7	0	0.0	- 1	0.0	- 5	0.3	- 15	0.8	- 38	2.0
+ 1000	- 15	1.5	0	0.0	- 1	0.1	- 2	0.2	- 7	0.7	- 18	1.8
0	0	1.1	0	0.0	0	0.0	0	0.2	0	0.6	0	1.5
- 1000	+ 11	0.7	0	0.0	0	0.1	+ 2	0.1	+ 6	0.4	+ 15	1.2
- 2000	+ 18	0.3	0	0.0	+ 1	0.0	+ 3	0.1	+ 10	0.3	+ 27	0.8
- 3000	+ 21	0.4	0	0.0	+ 1	0.0	+ 4	0.1	+ 13	0.4	+ 35	1.0
- 4000	+ 25	0.3	0	0.0	+ 1	0.0	+ 5	0.1	+ 17	0.4	+ 45	1.1
- 5000	+ 28		0	0.0	+ 1	0.0	+ 6		+ 21		+ 56	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000	+ 0.4	0.0	- 0.1	- 0.5	- 1.2	- 2.1
+ 3000	+ 0.1	0.0	0.0	- 0.2	- 0.8	- 1.4
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	0.0	0.0	+ 0.1	+ 0.3	+ 1.0	+ 2.2

ZONE I4  
 $T = 20 \text{ km}$

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.05$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_8' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	— 133	3.0	— 1	0.0	— 3	0.1	— 12	0.3	— 31	0.7	— 71	1.4
+ 5000	— 103	2.7	— 1	0.1	— 2	0.0	— 9	0.2	— 24	0.6	— 57	1.4
+ 4000	— 76	2.4	0	0.0	— 2	0.1	— 7	0.2	— 18	0.5	— 43	1.3
+ 3000	— 52	2.0	0	0.0	— 1	0.0	— 5	0.2	— 13	0.5	— 30	1.1
+ 2000	— 32	1.8	0	0.0	— 1	0.1	— 3	0.2	— 8	0.4	— 19	1.0
+ 1000	— 14	1.4	0	0.0	0	0.0	— 1	0.1	— 4	0.4	— 9	0.9
0	0	1.1	0	0.0	0	0.0	0	0.1	0	0.3	0	0.7
— 1000	+ 11	0.6	0	0.0	0	0.0	+ 1	0.1	+ 3	0.2	+ 7	0.5
— 2000	+ 17	0.4	0	0.0	0	0.1	+ 2	0.1	+ 5	0.2	+ 12	0.4
— 3000	+ 21	0.3	0	0.0	+ 1	0.0	+ 3	0.0	+ 7	0.2	+ 16	0.4
— 4000	+ 24	0.3	0	0.0	+ 1	0.0	+ 3	0.1	+ 9	0.2	+ 20	0.4
— 5000	+ 27	0.3	0	0.0	+ 1	0.0	+ 4	0.1	+ 11	0.2	+ 25	0.5

## CORRECTION FOR ELEVATION OF STATION.

$dp' = \text{correction per 1000 m elevation.}$

$h$	$d_{P_0}'$	$d_{P_1}' - d_{P_0}'$	$d_{P_2}' - d_{P_0}'$	$d_{P_4}' - d_{P_0}'$	$d_{P_8}' - d_{P_0}'$	$d_{P_8}' - d_{P_0}'$
m						
+ 6000	+ 0.2	0.0	— 0.1	— 0.3	— 0.7	— 1.7
+ 3000	+ 0.1	0.0	0.0	— 0.2	— 0.4	— 0.9
0	0.0	0.0	0.0	0.0	0.0	0.0
— 3000	— 0.1	0.0	0.0	+ 0.1	+ 0.5	+ 1.2

## ZONE 13

 $T = 20 \text{ km}$ 

$h$	$p_0'$ $R = 0$	$p_1' - p_0'$ $R = 29.05$	$p_2' - p_0'$ $R = 58.10$	$p_4' - p_0'$ $R = 116.20$	$p_6' - p_0'$ $R = 174.30$	$p_8' - p_0'$ $R = 232.40$
$m$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$
+ 6000	— 207	4.7 — 1	0.0 — 3	0.1 — 11	0.2 — 28	0.6 — 65
+ 5000	— 160	4.2 — 1	0.1 — 2	0.0 — 9	0.2 — 22	0.6 — 47
+ 4000	— 118	3.7 — 0	0.0 — 2	0.1 — 7	0.2 — 16	0.5 — 35
+ 3000	— 81	3.2 — 0	0.0 — 1	0.1 — 5	0.2 — 11	0.4 — 24
+ 2000	— 49	2.7 — 0	0.0 — 1	0.1 — 3	0.2 — 7	0.4 — 15
+ 1000	— 22	2.2 — 0	0.0 — 0	0.1 — 1	0.2 — 3	0.4 — 7
0	0	1.7 — 0	0.0 — 0	0.0 — 0	0.1 — 0	0.3 — 0
— 1000	+ 17	1.0 — 0	0.0 — 0	0.0 + 1	0.1 + 3	0.3 + 6
— 2000	+ 27	0.5 — 0	0.0 — 0	0.1 + 2	0.1 + 5	0.2 + 10
— 3000	+ 32	0.5 — 0	0.0 + 1	0.1 + 3	0.1 + 6	0.1 + 13
— 4000	+ 37	0.5 — 0	0.0 + 1	0.0 + 3	0.0 + 8	0.2 + 17
— 5000	+ 42	0.5 — 0	0.0 + 1	0.0 + 4	0.1 + 10	0.2 + 21

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$d_{p_0}'$	$d_{p_1}' - d_{p_0}'$	$d_{p_2}' - d_{p_0}'$	$d_{p_4}' - d_{p_0}'$	$d_{p_6}' - d_{p_0}'$	$d_{p_8}' - d_{p_0}'$
$m$						
+ 6000	+ 0.4	0.0	— 0.1	— 0.3	— 0.7	— 1.6
+ 3000	+ 0.2	0.0	0.0	— 0.2	— 0.4	— 0.9
0	0.0	0.0	0.0	0.0	0.0	0.0
— 3000	— 0.1	0.0	+ 0.1	+ 0.2	+ 0.4	+ 0.8

## ZONE 12

 $T = 20 \text{ km}$ 

$h$	$p_0'$ $R = 0$		$p_1' - p_0'$ $R = 29.05$		$p_2' - p_0'$ $R = 58.10$		$p_4' - p_0'$ $R = 116.20$		$p_6' - p_0'$ $R = 174.30$		$p_8' - p_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 126	2.9	0	0.0	- 1	0.0	- 4	0.1	- 9	0.2	- 17	0.4
+ 5000	- 97	2.5	0	0.0	- 1	0.0	- 3	0.1	- 7	0.2	- 13	0.3
+ 4000	- 72	2.3	0	0.0	- 1	0.1	- 2	0.0	- 5	0.1	- 10	0.3
+ 3000	- 49	1.9	0	0.0	0	0.0	- 2	0.1	- 4	0.2	- 7	0.3
+ 2000	- 30	1.7	0	0.0	0	0.0	- 1	0.1	- 2	0.1	- 4	0.2
+ 1000	- 13	1.3	0	0.0	0	0.0	0	0.0	- 1	0.1	- 2	0.2
0	0	1.0	0	0.0	0	0.0	0	0.0	0	0.1	0	0.2
- 1000	+ 10	0.6	0	0.0	0	0.0	0	0.1	+ 1	0.1	+ 2	0.1
- 2000	+ 16	0.4	0	0.0	0	0.0	+ 1	0.0	+ 2	0.0	+ 3	0.1
- 3000	+ 20	0.3	0	0.0	0	0.0	+ 1	0.0	+ 2	0.1	+ 4	0.1
- 4000	+ 23	0.4	0	0.0	0	0.0	+ 1	0.0	+ 3	0.0	+ 5	0.1
- 5000	+ 27		0	0.0	0	0.0	+ 1	0.0	+ 3		+ 6	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000				- 0.1	- 0.2	- 0.4
+ 3000				- 0.1	- 0.2	- 0.2
0				0.0	0.0	0.0
- 3000				+ 0.1	+ 0.1	+ 0.2

## ZONE II

 $T = 20 \text{ km}$ 

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.05$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_6' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
+ 6000	— 99	2.3	0	0.0	0	0.0	— 2	0.1	— 4	0.1	— 7	0.1
+ 5000	— 76	2.0	0	0.0	0	0.0	— 1	0.0	— 3	0.1	— 6	0.2
+ 4000	— 56	1.7	0	0.0	0	0.0	— 1	0.0	— 2	0.0	— 4	0.1
+ 3000	— 39	1.6	0	0.0	0	0.0	— 1	0.1	— 2	0.1	— 3	0.1
+ 2000	— 23	1.3	0	0.0	0	0.0	0	0.0	— 1	0.1	— 2	0.1
+ 1000	— 10	1.0	0	0.0	0	0.0	0	0.0	0	0.0	— 1	0.1
0	0	0.8	0	0.0	0	0.0	0	0.0	0	0.0	0	0.1
— 1000	+ 8	0.5	0	0.0	0	0.0	0	0.0	0	0.1	+ 1	0.0
— 2000	+ 13	0.3	0	0.0	0	0.0	0	0.0	+ 1	0.0	+ 1	0.1
— 3000	+ 16	0.2	0	0.0	0	0.0	0	0.1	+ 1	0.0	+ 2	0.0
— 4000	+ 18	0.2	0	0.0	0	0.0	+ 1	0.0	+ 1	0.1	+ 2	0.1
— 5000	+ 20		0	0.0	0	0.0	+ 1		+ 2		+ 3	

## ZONE 10

 $T = 20 \text{ km}$ 

$L$	$P_0'$	$P_1' - P_0'$	$P_2' - P_0'$	$P_4' - P_0'$	$P_6' - P_0'$	$P_8' - P_0'$
0.1 mgal.						
— 60	— 31	0	0	0	— 1	— 1
— 40	— 18	0	0	0	0	— 1
— 20	— 8	0	0	0	0	0
0	0	0	0	0	0	0
+ 20	+ 6	0	0	0	0	0
+ 40	+ 10	0	0	0	0	+ 1
+ 60	+ 12	0	0	0	+ 1	+ 1
+ 80	+ 12	0	0	0	+ 1	+ 1

ZONE 9  
 $T = 20 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal.						
-20	- 9	0	0	0	0	0
0	0	0	0	0	0	0
+20	+ 6	0	0	0	0	0
+40	+ 8	0	0	0	0	0

ZONE 8  
 $T = 20 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal.						
-20	- 9	0	0	0	0	0
0	0	0	0	0	0	0
+20	+ 6	0	0	0	0	0
+40	+ 8	0	0	0	0	0

ZONES 7-I  
 $T = 20 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal.						
0	0	0	0	0	0	0
+20	+ 6	0	0	0	0	0
+40	+11	0	0	0	0	0
+60	+15	0	0	0	0	0









## ZONE K

 $T = 30 \text{ km}$ 

$h$	$P_0$		$P_1$		$P_2$		$P_4$		$P_6$		$P_8$	
	$R = 0$	$\Delta$	$R = 29.05$	$\Delta$	$R = 58.10$	$\Delta$	$R = 116.20$	$\Delta$	$R = 174.30$	$\Delta$	$R = 232.40$	$\Delta$
m												
+ 6000	— 310	3.2	— 274	3.0	— 149	1.8	— 114	1.6	— 69	1.0	— 46	0.6
+ 5500	— 294	3.4	— 259	3.0	— 140	1.8	— 106	1.4	— 64	1.0	— 43	0.8
+ 5000	— 277	3.6	— 244	3.2	— 131	1.8	— 99	1.6	— 59	1.0	— 39	0.6
+ 4500	— 259	4.0	— 228	3.6	— 122	2.2	— 91	1.8	— 54	1.0	— 36	0.8
+ 4000	— 239	4.2	— 210	3.8	— 111	2.2	— 82	1.6	— 49	1.0	— 32	0.6
+ 3500	— 218	4.8	— 191	4.2	— 100	2.2	— 74	1.8	— 44	1.2	— 29	0.8
+ 3000	— 194	5.0	— 170	4.4	— 89	2.6	— 65	2.0	— 38	1.2	— 25	0.8
+ 2500	— 169	5.6	— 148	5.0	— 76	2.6	— 55	2.0	— 32	1.2	— 21	0.8
+ 2000	— 141	6.0	— 123	5.4	— 63	2.8	— 45	2.2	— 26	1.2	— 17	0.8
+ 1500	— 111	6.0	— 96	5.8	— 49	3.0	— 34	2.2	— 20	1.2	— 13	0.8
+ 1000	— 77	7.2	— 67	6.4	— 34	3.4	— 23	2.2	— 14	1.4	— 9	1.0
+ 500	— 41	8.2	— 35	7.0	— 17	3.4	— 12	2.4	— 7	1.4	— 4	0.8
0	0	9.0	0	7.8	0	3.8	0	2.6	0	1.4	0	1.0
— 500	+ 45	10.0	+ 39	8.4	+ 19	4.0	+ 13	2.6	+ 7	1.4	+ 5	0.8
— 1000	+ 95	11.0	+ 81	9.4	+ 39	4.4	+ 26	2.8	+ 14	1.6	+ 9	1.0
— 1500	+ 150	12.2	+ 128	10.4	+ 61	4.8	+ 40	2.8	+ 22	1.6	+ 14	1.0
— 2000	+ 211	13.6	+ 180	11.8	+ 85	5.4	+ 54	3.0	+ 30	1.6	+ 19	1.0
— 2500	+ 279	14.8	+ 239	12.8	+ 112	5.8	+ 69	3.4	+ 38	1.8	+ 24	1.0
— 3000	+ 353	16.2	+ 303	14.6	+ 141	6.4	+ 86	3.4	+ 47	1.8	+ 30	1.0
— 3500	+ 434	17.2	+ 376	16.4	+ 173	7.2	+ 103	3.6	+ 56	1.8	+ 35	1.2
— 4000	+ 520	17.6	+ 458	18.6	+ 209	7.6	+ 121	3.8	+ 65	2.0	+ 41	1.0
— 4500	+ 608	17.4	+ 551	21.0	+ 247	8.4	+ 140	4.0	+ 75	2.0	+ 46	1.2
— 5000	+ 695		+ 656		+ 289		+ 160		+ 85		+ 52	

## CORRECTION FOR ELEVATION OF STATION.

 $dp = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0$	$dp_1$	$dp_2$	$dp_4$	$dp_6$	$dp_8$
m						
+ 6000	+ 11.8	+ 9.3	+ 4.2	+ 2.2	+ 1.0	+ 0.5
+ 5000	+ 10.7	+ 8.8	+ 3.8	+ 2.0	+ 0.9	+ 0.5
+ 4000	+ 9.4	+ 7.8	+ 3.3	+ 1.7	+ 0.7	+ 0.4
+ 3000	+ 7.8	+ 6.4	+ 2.6	+ 1.3	+ 0.6	+ 0.3
+ 2000	+ 5.8	+ 4.4	+ 1.8	+ 0.9	+ 0.4	+ 0.2
+ 1000	+ 3.3	+ 2.6	+ 1.0	+ 0.5	+ 0.2	+ 0.2
0	0.0	0.0	0.0	0.0	0.0	0.0
— 1000	— 4.2	— 3.5	— 1.3	— 0.5	— 0.2	— 0.1

ZONE L  
 $T = 30 \text{ km}$

$h$	$P_0$ $R = 0$	$P_1$ $R = 29.05$	$P_2$ $R = 58.10$	$P_4$ $R = 116.20$	$P_6$ $R = 174.30$	$P_8$ $R = 232.40$
m	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$
+ 6000	- 579	- 545	- 503	- 259	- 161	- 108
+ 5500	- 546	- 514	- 473	- 242	- 150	- 101
+ 5000	- 511	- 481	- 442	- 224	- 138	- 93
+ 4500	- 474	- 446	- 409	- 206	- 126	- 84
+ 4000	- 434	- 408	- 373	- 187	- 114	- 76
+ 3500	- 392	- 368	- 336	- 167	- 101	- 67
+ 3000	- 347	- 326	- 296	- 146	- 88	- 58
+ 2500	- 298	- 281	- 254	- 124	- 75	- 49
+ 2000	- 246	- 232	- 210	- 102	- 61	- 40
+ 1500	- 191	- 180	- 162	- 78	- 46	- 30
+ 1000	- 131	- 125	- 112	- 53	- 31	- 21
+ 500	- 68	- 65	- 58	- 27	- 16	- 11
0	0	0	0	0	0	0
- 500	+ 73	+ 70	+ 62	+ 28	+ 17	+ 11
- 1000	+ 149	+ 145	+ 128	+ 58	+ 34	+ 22
- 1500	+ 231	+ 226	+ 199	+ 89	+ 52	+ 33
- 2000	+ 316	+ 313	+ 275	+ 122	+ 70	+ 45
- 2500	+ 404	+ 407	+ 357	+ 156	+ 89	+ 57
- 3000	+ 494	+ 508	+ 445	+ 192	+ 109	+ 69
- 3500	+ 585	+ 617	+ 541	+ 230	+ 129	+ 82
- 4000	+ 674	+ 731	+ 643	+ 270	+ 151	+ 95
- 4500	+ 757	+ 853	+ 754	+ 313	+ 173	+ 108
- 5000	+ 831	+ 982	+ 875	+ 357	+ 196	+ 122

## CORRECTION FOR ELEVATION OF STATION.

$dp = \text{correction per } 1000 \text{ m elevation.}$

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_6}$	$d_{p_8}$
m						
+ 6000	+ 16.7	+ 16.2	+ 13.2	+ 4.9	+ 2.3	+ 1.2
+ 5000	+ 14.9	+ 14.4	+ 11.8	+ 4.3	+ 2.0	+ 1.1
+ 4000	+ 12.8	+ 12.3	+ 10.1	+ 3.6	+ 1.7	+ 0.9
+ 3000	+ 10.2	+ 10.0	+ 8.1	+ 2.8	+ 1.3	+ 0.7
+ 2000	+ 7.3	+ 7.4	+ 5.9	+ 2.0	+ 0.9	+ 0.5
+ 1000	+ 3.8	+ 4.1	+ 3.2	+ 1.1	+ 0.5	+ 0.3
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	- 4.0	- 4.7	- 3.8	- 1.2	- 0.5	- 0.3

ZONE M  
 $T = 30 \text{ km}$

$h$	$P_0$		$P_1$		$P_2$		$P_4$		$P_6$		$P_8$	
	$R = 0$	$\Delta$	$R = 29.05$	$\Delta$	$R = 58.10$	$\Delta$	$R = 116.20$	$\Delta$	$R = 174.30$	$\Delta$	$R = 232.40$	$\Delta$
m												
+ 6000	-1583	22.0	-1625	22.2	-1586	20.8	-1172	16.0	- 798	11.2	- 557	8.2
+ 5500	-1473	23.0	-1514	22.6	-1482	21.8	-1092	16.4	- 742	11.6	- 516	8.2
+ 5000	-1358	23.8	-1401	23.2	-1373	22.6	-1010	17.0	- 684	11.8	- 475	8.4
+ 4500	-1239	24.6	-1285	24.4	-1260	23.6	- 925	17.8	- 625	12.2	- 433	8.6
+ 4000	-1116	25.6	-1163	25.4	-1142	24.6	- 836	18.4	- 564	12.8	- 390	9.0
+ 3500	- 988	26.2	-1036	26.4	-1019	25.6	- 744	18.8	- 500	13.0	- 345	9.0
+ 3000	- 857	27.0	- 904	27.6	- 891	26.6	- 650	19.6	- 435	13.4	- 300	9.4
+ 2500	- 722	27.8	- 766	29.2	- 758	28.0	- 552	20.4	- 368	13.8	- 253	9.6
+ 2000	- 583	28.4	- 620	30.0	- 618	29.0	- 450	21.2	- 299	14.2	- 205	9.8
+ 1500	- 441	29.0	- 470	30.8	- 473	30.2	- 344	22.0	- 228	14.8	- 156	10.2
+ 1000	- 296	29.4	- 316	31.4	- 322	31.6	- 234	23.0	- 154	15.2	- 105	10.4
+ 500	- 149	29.8	- 159	31.8	- 164	32.8	- 119	23.8	- 78	15.6	- 53	10.6
0	0	30.0	0	32.0	0	34.2	0	25.0	0	16.2	0	11.0
- 500	+ 150	29.8	+ 160	32.0	+ 171	35.6	+ 125	25.8	+ 81	16.6	+ 55	11.2
- 1000	+ 299	29.4	+ 320	32.2	+ 349	37.0	+ 254	27.0	+ 164	17.4	+ 111	11.6
- 1500	+ 446	29.0	+ 481	31.8	+ 534	38.2	+ 389	27.8	+ 251	17.6	+ 169	11.8
- 2000	+ 591	27.8	+ 640	31.6	+ 725	40.0	+ 528	29.4	+ 339	18.4	+ 228	12.0
- 2500	+ 730	26.4	+ 798	31.6	+ 925	41.6	+ 675	30.2	+ 431	19.0	+ 288	12.4
- 3000	+ 862	24.8	+ 956	31.4	+1133	43.2	+ 826	31.4	+ 526	19.6	+ 350	12.6
- 3500	+ 986	22.4	+1113	29.6	+1349	44.6	+ 983	32.6	+ 624	20.2	+ 413	13.0
- 4000	+1098	19.8	+1261	27.2	+1572	46.4	+1146	34.2	+ 725	20.8	+ 478	13.4
- 4500	+1197	16.2	+1397	24.0	+1804	47.4	+1317	35.4	+ 829	21.8	+ 545	14.0
- 5000	+1278		+1517		+2041		+1494		+ 938		+ 615	

## CORRECTION FOR ELEVATION OF STATION.

$dp = \text{correction per 1000 m elevation.}$

$h$	$d_{p0}$	$d_{p1}$	$d_{p2}$	$d_{p4}$	$d_{p6}$	$d_{p8}$
m						
+ 6000	+ 18.6	+ 22.9	+ 28.5	+ 19.3	+ 10.5	+ 6.3
+ 5000	+ 15.0	+ 20.5	+ 25.0	+ 16.7	+ 9.3	+ 5.4
+ 4000	+ 11.3	+ 16.8	+ 20.9	+ 13.9	+ 7.1	+ 4.5
+ 3000	+ 7.8	+ 11.9	+ 16.3	+ 11.0	+ 6.0	+ 3.5
+ 2000	+ 4.5	+ 5.9	+ 11.1	+ 7.8	+ 4.1	+ 2.5
+ 1000	+ 1.7	+ 2.1	+ 5.7	+ 4.1	+ 2.2	+ 1.3
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	- 0.1	- 0.6	- 6.1	- 4.6	- 2.3	- 1.3
- 2000	+ 2.1	- 0.1	-12.5	- 9.4	- 4.7	- 2.6
- 3000	+ 7.6	+ 0.1	-19.7	-14.4	- 7.4	- 3.8

## ZONE N

 $T = 30 \text{ km}$ 

$h$	$P_0$ $R = 0$	$P_1$ $R = 29.05$	$P_2$ $R = 58.10$	$P_4$ $R = 116.20$	$P_6$ $R = 174.30$	$P_8$ $R = 232.40$
$m$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$
+ 6000	-1271 22.0	-1324 22.4	-1471 23.8	-1691 24.6	-1420 20.8	-1104 16.4
+ 5500	-1161 22.2	-1212 22.6	-1352 24.0	-1568 25.2	-1316 21.0	-1022 16.6
+ 5000	-1050 22.0	-1099 22.8	-1232 24.2	-1442 25.8	-1211 21.6	-939 17.0
+ 4500	- 940 22.0	- 985 22.8	-1110 24.6	-1313 26.6	-1103 22.4	- 854 17.4
+ 4000	- 830 22.0	- 871 23.0	- 987 24.8	-1180 27.0	- 991 22.8	- 767 17.8
+ 3500	- 720 21.6	- 756 22.6	- 863 24.8	-1045 27.8	- 877 23.2	- 678 18.2
+ 3000	- 612 21.6	- 643 22.4	- 739 24.8	- 906 28.4	- 761 23.8	- 587 18.4
+ 2500	- 504 21.2	- 531 22.2	- 615 24.8	- 764 29.0	- 642 24.6	- 495 19.0
+ 2000	- 398 20.6	- 420 21.6	- 491 24.8	- 619 29.8	- 519 24.8	- 400 19.2
+ 1500	- 295 20.4	- 312 21.4	- 367 24.8	- 470 30.6	- 395 25.8	- 304 19.8
+ 1000	- 193 19.6	- 205 20.8	- 243 24.4	- 317 31.2	- 266 26.2	- 205 20.2
+ 500	- 95 19.0	- 101 20.2	- 121 24.2	- 161 32.2	- 135 27.0	- 104 20.8
0	0 18.2	0 19.4	0 23.8	0 33.0	0 27.6	0 21.2
- 500	+ 91 17.4	+ 97 18.6	+ 119 23.0	+ 165 33.6	+ 138 28.2	+ 106 21.6
-1000	+ 178 16.4	+ 190 17.6	+ 234 22.6	+ 333 34.6	+ 279 29.0	+ 214 22.2
-1500	+ 260 15.2	+ 278 16.6	+ 347 21.4	+ 506 35.2	+ 424 29.6	+ 325 22.6
-2000	+ 336 14.2	+ 361 15.4	+ 454 20.6	+ 682 36.2	+ 572 30.4	+ 438 23.0
-2500	+ 407 12.8	+ 438 14.0	+ 557 19.4	+ 863 36.8	+ 724 31.0	+ 553 23.2
-3000	+ 471 11.6	+ 508 12.6	+ 654 17.8	+ 1047 37.8	+ 879 31.8	+ 669 23.8
-3500	+ 529 10.2	+ 571 11.0	+ 743 16.2	+ 1236 38.4	+ 1038 32.4	+ 788 24.4
-4000	+ 580 8.6	+ 626 9.6	+ 824 14.4	+ 1428 39.6	+ 1200 3.4	+ 910 25.0
-4500	+ 623 7.0	+ 674 7.8	+ 896 12.0	+ 1626 40.2	+ 1367 34.0	+ 1035 25.6
-5000	+ 658	+ 713	+ 956	+ 1827	+ 1537	+ 1163

## CORRECTION FOR ELEVATION OF STATION.

 $dp = \text{correction per 1000 m elevation.}$ 

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_6}$	$d_{p_8}$
$m$						
+ 6000	- 6.8	- 4.7	+ 1.5	+ 18.1	+ 15.2	+ 10.3
+ 5000	- 7.1	- 5.8	+ 0.0	+ 15.4	+ 13.0	+ 9.0
+ 4000	- 6.9	- 6.1	- 1.0	+ 12.6	+ 10.6	+ 7.4
+ 3000	- 6.2	- 5.7	- 1.5	+ 9.8	+ 8.1	+ 5.8
+ 2000	- 4.9	- 4.6	- 1.6	+ 6.8	+ 5.6	+ 4.0
+ 1000	- 2.9	- 2.7	- 1.2	+ 3.5	+ 2.9	+ 2.1
0	0.0	0.0	0.0	0.0	0.0	0.0
-1000	+ 3.7	+ 3.6	+ 2.3	- 3.6	- 3.0	- 2.1
-2000	+ 8.3	+ 8.1	+ 5.9	- 7.3	- 6.1	- 4.2
-3000	+ 13.8	+ 13.8	+ 10.9	- 10.7	- 9.2	- 5.9

ZONE O<sub>1</sub>  
T = 30 km

h	P <sub>0</sub> R = 0		P <sub>1</sub> R = 29.05		P <sub>2</sub> R = 58.10		P <sub>4</sub> R = 116.20		P <sub>8</sub> R = 174.30		P <sub>8</sub> R = 232.40	
	m	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ	Δ
+ 6000	- 613	11.8	- 630	12.0	- 686	12.8	- 965	16.0	-1142	17.4	-1027	15.6
+ 5500	- 554	11.4	- 570	11.8	- 622	12.6	- 885	16.0	-1055	17.8	- 949	15.8
+ 5000	- 497	11.4	- 511	11.6	- 559	12.4	- 805	16.0	- 966	17.8	- 870	16.2
+ 4500	- 440	11.0	- 453	11.2	- 497	12.2	- 725	16.2	- 877	18.4	- 789	16.4
+ 4000	- 385	10.8	- 397	11.2	- 436	12.0	- 644	16.2	- 785	18.6	- 707	16.6
+ 3500	- 331	10.6	- 341	10.8	- 376	11.8	- 563	16.2	- 692	18.8	- 624	17.0
+ 3000	- 278	10.2	- 287	10.4	- 317	11.4	- 482	16.2	- 598	19.0	- 539	17.2
+ 2500	- 227	9.8	- 235	10.2	- 260	11.2	- 401	16.2	- 503	19.4	- 453	17.6
+ 2000	- 178	9.4	- 184	9.8	- 204	10.8	- 320	16.2	- 406	19.8	- 365	17.6
+ 1500	- 131	9.2	- 135	9.4	- 150	10.4	- 239	16.0	- 307	20.2	- 277	18.2
+ 1000	- 85	8.6	- 88	9.0	- 98	10.0	- 159	16.0	- 206	20.4	- 186	18.4
+ 500	- 42	8.4	- 43	8.6	- 48	9.6	- 79	15.8	- 104	20.8	- 94	18.8
0	0	7.8	0	8.0	0	9.0	0	15.6	0	21.2	0	19.0
- 500	+ 39	7.4	+ 40	7.6	+ 45	8.4	+ 78	15.4	+ 106	21.6	+ 95	19.4
- 1000	+ 76	6.8	+ 78	7.2	+ 87	8.0	+ 155	15.2	+ 214	22.0	+ 192	19.8
- 1500	+ 110	6.2	+ 114	6.6	+ 127	7.4	+ 231	14.8	+ 324	22.2	+ 291	19.8
- 2000	+ 141	5.8	+ 147	6.0	+ 164	6.8	+ 305	14.4	+ 435	22.8	+ 390	20.4
- 2500	+ 170	5.2	+ 177	5.4	+ 198	6.2	+ 377	14.0	+ 549	23.0	+ 492	20.4
- 3000	+ 196	4.8	+ 204	4.8	+ 229	5.6	+ 447	13.4	+ 664	23.2	+ 594	20.6
- 3500	+ 220	4.0	+ 228	4.2	+ 257	4.6	+ 514	12.8	+ 780	23.2	+ 697	21.0
- 4000	+ 240	3.4	+ 249	3.6	+ 280	4.2	+ 578	12.0	+ 896	24.6	+ 802	21.6
- 4500	+ 257	2.8	+ 267	2.8	+ 301	3.2	+ 638	11.2	+ 1019	24.6	+ 910	21.8
- 5000	+ 271		+ 281		+ 317		+ 694		+ 1142		+ 1019	

## CORRECTION FOR ELEVATION OF STATION.

*dp* = correction per 1000 m elevation.

h	d <sub>p0</sub>	d <sub>p1</sub>	d <sub>p2</sub>	d <sub>p4</sub>	d <sub>p8</sub>	d <sub>p8</sub>
m						
+ 6000	- 8.2	- 8.1	- 7.4	0.0	+ 8.4	+ 7.7
+ 5000	- 7.4	- 7.3	- 6.8	- 0.5	+ 7.1	+ 6.5
+ 4000	- 6.3	- 6.3	- 5.9	- 0.9	+ 5.8	+ 5.3
+ 3000	- 5.1	- 5.1	- 4.7	- 0.9	+ 4.4	+ 4.0
+ 2000	- 3.6	- 3.6	- 3.3	- 0.8	+ 3.1	+ 2.8
+ 1000	- 1.9	- 1.9	- 1.7	- 0.5	+ 1.6	+ 1.4
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	+ 2.1	+ 2.2	+ 2.6	+ 1.0	- 1.7	- 1.4
- 2000	+ 4.4	+ 4.5	+ 5.0	+ 2.3	- 3.4	- 2.7
- 3000	+ 6.9	+ 7.1	+ 7.8	+ 4.1	- 4.8	- 3.8

ZONE O<sub>2</sub>  
T = 30 km

h	P <sub>0</sub> R = 0		P <sub>1</sub> R = 29.05		P <sub>2</sub> R = 58.10		P <sub>4</sub> R = 116.20		P <sub>6</sub> R = 174.30		P <sub>8</sub> R = 232.40	
	m	Δ	m	Δ	m	Δ	m	Δ	m	Δ	m	Δ
+ 6000	— 403	8.0	— 411	8.0	— 443	8.8	— 567	10.6	— 854	13.8	— 959	15.4
+ 5500	— 363	7.8	— 371	8.0	— 399	8.4	— 514	10.4	— 785	13.8	— 882	15.4
+ 5000	— 324	7.4	— 331	7.8	— 357	8.4	— 462	10.2	— 716	14.0	— 805	15.4
+ 4500	— 287	7.4	— 292	7.4	— 315	8.0	— 411	10.2	— 646	14.0	— 728	15.4
+ 4000	— 250	7.2	— 255	7.4	— 275	7.8	— 360	10.0	— 576	14.2	— 651	15.6
+ 3500	— 214	7.0	— 218	7.0	— 236	7.6	— 310	9.6	— 505	14.2	— 573	15.8
+ 3000	— 179	6.6	— 183	6.8	— 198	7.4	— 262	9.4	— 434	14.4	— 494	15.8
+ 2500	— 146	6.4	— 149	6.6	— 161	7.0	— 215	9.4	— 362	14.4	— 415	16.2
+ 2000	— 114	6.2	— 116	6.2	— 126	6.8	— 168	8.8	— 290	14.4	— 334	16.4
+ 1500	— 83	5.8	— 85	6.0	— 92	6.4	— 124	8.6	— 218	14.4	— 252	16.6
+ 1000	— 54	5.6	— 55	5.8	— 60	6.2	— 81	8.2	— 146	14.6	— 169	16.6
+ 500	— 26	5.2	— 27	5.4	— 29	5.8	— 40	8.0	— 73	14.6	— 86	17.2
0	0	5.0	0	5.0	0	5.4	0	7.6	0	14.6	0	17.4
— 500	+ 25	4.6	+ 25	4.8	+ 27	5.0	+ 38	7.2	+ 73	14.6	+ 87	17.6
— 1000	+ 48	4.2	+ 49	4.4	+ 52	4.8	+ 74	6.8	+ 146	14.6	+ 175	17.8
— 1500	+ 69	4.0	+ 71	4.0	+ 76	4.2	+ 108	6.4	+ 219	14.6	+ 264	18.0
— 2000	+ 89	3.6	+ 91	3.8	+ 97	4.0	+ 140	5.8	+ 292	14.6	+ 354	18.2
— 2500	+ 107	3.2	+ 110	3.2	+ 117	3.6	+ 169	5.4	+ 365	14.4	+ 445	18.4
— 3000	+ 123	3.0	+ 126	3.0	+ 135	3.2	+ 196	4.8	+ 437	14.4	+ 537	18.4
— 3500	+ 138	2.6	+ 141	2.6	+ 151	2.8	+ 220	4.2	+ 509	14.6	+ 629	18.8
— 4000	+ 151	2.2	+ 154	2.2	+ 165	2.4	+ 241	3.4	+ 582	14.4	+ 723	19.0
— 4500	+ 162	1.6	+ 165	1.8	+ 177	2.0	+ 258	3.0	+ 654	14.4	+ 818	19.2
— 5000	+ 170		+ 174		+ 187		+ 273		+ 726		+ 914	

## CORRECTION FOR ELEVATION OF STATION.

*dp* = correction per 1000 m elevation.

h	d <sub>p<sub>0</sub></sub>	d <sub>p<sub>1</sub></sub>	d <sub>p<sub>2</sub></sub>	d <sub>p<sub>4</sub></sub>	d <sub>p<sub>6</sub></sub>	d <sub>p<sub>8</sub></sub>
m						
+ 6000	— 6.6	— 6.7	— 7.1	— 6.2	+ 2.1	+ 3.7
+ 5000	— 5.7	— 5.8	— 6.2	— 5.7	+ 1.6	+ 3.8
+ 4000	— 4.7	— 4.8	— 5.1	— 5.0	+ 1.2	+ 3.6
+ 3000	— 3.7	— 3.8	— 4.1	— 4.0	+ 0.8	+ 3.0
+ 2000	— 2.6	— 2.6	— 2.9	— 2.9	+ 0.4	+ 2.2
+ 1000	— 1.3	— 1.4	— 1.5	— 1.5	+ 0.1	+ 1.1
0	0.0	0.0	0.0	0.0	0.0	0.0
— 1000	+ 1.4	+ 1.4	+ 1.7	+ 1.7	— 0.1	— 1.2
— 2000	+ 2.9	+ 3.0	+ 3.4	+ 3.5	0.0	— 2.2
— 3000	+ 4.5	+ 4.6	+ 5.0	+ 5.8	+ 0.2	— 2.8

## ZONE 18

 $T = 30 \text{ km}$ 

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.05$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_6' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	188	3.9	3	0.1	11	0.2	58	1.0	182	2.7	312	3.9
+ 5000	149	3.6	2	0.0	9	0.2	48	1.1	155	2.6	273	4.5
+ 4000	113	3.3	2	0.1	7	0.2	37	1.0	129	2.9	228	5.1
+ 3000	80	3.0	1	0.0	5	0.2	27	0.9	100	3.3	177	5.5
+ 2000	50	2.7	1	0.1	3	0.2	18	0.9	67	3.4	122	5.9
+ 1000	23	2.3	0	0.0	2	0.1	9	0.9	33	3.3	63	6.3
0	0	1.9	0	0.0	0	0.2	0	0.8	0	3.1	0	6.8
- 1000	+ 19	1.5	0	0.1	+ 1	+ 0.1	+ 8	+ 0.7	+ 31	+ 2.9	+ 68	+ 7.2
- 2000	+ 34	1.1	+ 1	0.0	+ 3	+ 0.1	+ 15	+ 0.5	+ 60	+ 2.8	+ 140	+ 7.6
- 3000	+ 45	0.7	+ 1	0.0	+ 4	+ 0.0	+ 20	+ 0.5	+ 88	+ 2.7	+ 216	+ 8.1
- 4000	+ 52	0.2	+ 1	0.0	+ 4	+ 0.1	+ 25	+ 0.3	+ 115	+ 2.4	+ 297	+ 8.7
- 5000	+ 54		+ 1		+ 5		+ 28		+ 139		+ 384	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$d_{P_0}'$	$d_{P_1}' - d_{P_0}'$	$d_{P_2}' - d_{P_0}'$	$d_{P_4}' - d_{P_0}'$	$d_{P_6}' - d_{P_0}'$	$d_{P_8}' - d_{P_0}'$
m						
+ 6000	+ 1.1	0.0	- 0.1	- 0.4	+ 1.3	+ 7.0
+ 3000	+ 0.4	0.0	- 0.1	- 0.3	+ 0.8	+ 2.8
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.2	0.0	+ 0.1	+ 0.7	+ 1.1	+ 3.0

## ZONE 17

 $T = 30 \text{ km}$ 

$h$	$P_0'$ $R = 0$	$P_1' - P_0'$ $R = 29.05$	$P_2' - P_0'$ $R = 58.10$	$P_4' - P_0'$ $R = 116.20$	$P_6' - P_0'$ $R = 174.30$	$P_8' - P_0'$ $R = 232.40$
m	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$
+ 6000	182	2	8	41	125	305
+ 5000	144	2	7	33	104	261
+ 4000	109	1	5	26	82	214
+ 3000	77	1	4	19	61	165
+ 2000	48	1	2	12	40	113
+ 1000	22	0	1	6	20	58
0	0	0	0	0	0	0
- 1000	19	0	1	5	19	60
- 2000	33	1	2	10	36	124
- 3000	43	1	3	14	52	189
- 4000	49	1	3	16	63	257
- 5000	51	1	4	18	71	329

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$d_{P_0}'$	$d_{P_1}' - d_{P_0}'$	$d_{P_2}' - d_{P_0}'$	$d_{P_4}' - d_{P_0}'$	$d_{P_6}' - d_{P_0}'$	$d_{P_8}' - d_{P_0}'$
m						
+ 6000	+ 0.9	0.0	- 0.1	- 0.4	- 0.3	+ 3.7
+ 3000	+ 0.4	0.0	- 0.1	- 0.4	- 0.4	+ 1.9
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	0.0	0.0	+ 0.1	+ 0.4	+ 1.2	- 1.7

## ZONE 16

 $T = 30 \text{ km}$ 

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.05$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_6' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 177	3.7	- 2	0.1	- 6	0.1	- 27	0.5	- 86	1.6	- 244	3.9
+ 5000	- 140	3.5	- 1	0.0	- 5	0.1	- 22	0.5	- 70	1.5	- 205	4.0
+ 4000	- 105	3.1	- 1	0.0	- 4	0.1	- 17	0.4	- 55	1.5	- 165	4.1
+ 3000	- 74	2.8	- 1	0.1	- 3	0.1	- 13	0.5	- 40	1.4	- 124	4.1
+ 2000	- 46	2.5	0	0.0	- 2	0.1	- 8	0.4	- 26	1.4	- 83	4.1
+ 1000	- 21	2.1	0	0.0	- 1	0.1	- 4	0.4	- 12	1.2	- 42	4.2
0	0	1.8	0	0.0	0	0.1	0	0.3	0	1.1	0	4.1
- 1000	+ 18	1.4	0	0.0	+ 1	0.1	+ 3	0.4	+ 11	1.0	+ 41	4.1
- 2000	+ 32	1.0	0	0.0	+ 2	0.0	+ 7	0.2	+ 21	0.8	+ 82	3.9
- 3000	+ 42	0.6	0	0.1	+ 2	0.1	+ 9	0.2	+ 29	0.7	+ 121	3.7
- 4000	+ 48	0.1	+ 1	0.0	+ 3	0.0	+ 11	0.2	+ 36	0.4	+ 158	3.4
- 5000	+ 49		+ 1		+ 3		+ 13		+ 40		+ 192	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$d_{P_0}'$	$d_{P_1}' - d_{P_0}'$	$d_{P_2}' - d_{P_0}'$	$d_{P_4}' - d_{P_0}'$	$d_{P_6}' - d_{P_0}'$	$d_{P_8}' - d_{P_0}'$
m						
+ 6000	+ 0.7	0.0	- 0.1	- 0.2	- 1.0	+ 0.5
+ 3000	+ 0.3	0.0	- 0.1	- 0.2	- 0.5	+ 0.2
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.1	0.0	+ 0.1	+ 0.3	+ 1.0	+ 0.7

## ZONE 15

 $T = 30 \text{ km}$ 

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.65$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_6' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
+ 6000	172	3.6	1	0.0	5	0.1	21	0.4	70	1.4	151	2.7
+ 5000	136	3.4	1	0.0	4	0.1	17	0.4	56	1.2	124	2.7
+ 4000	102	3.0	1	0.0	3	0.1	13	0.4	44	1.2	97	2.6
+ 3000	72	2.7	1	0.1	2	0.1	9	0.3	32	1.1	71	2.5
+ 2000	45	2.4	0	0.0	1	0.0	6	0.3	21	1.1	46	2.4
+ 1000	21	2.1	0	0.0	1	0.1	3	0.3	10	1.0	22	2.2
0	0	1.7	0	0.0	0	0.1	0	0.3	0	0.9	0	2.1
- 1000	+ 17	1.4	0	0.0	+ 1	0.0	+ 3	0.2	+ 9	0.7	+ 21	1.8
- 2000	+ 31	0.9	0	0.0	+ 1	0.1	+ 5	0.1	+ 16	0.6	+ 39	1.5
- 3000	+ 40	0.6	0	0.0	+ 2	0.0	+ 6	0.2	+ 22	0.5	+ 54	1.3
- 4000	+ 46	0.2	0	0.0	+ 2	0.0	+ 8	0.1	+ 27	0.3	+ 67	0.9
- 5000	+ 48		0		+ 2		+ 9		+ 30		+ 76	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$d_{P_0}'$	$d_{P_1}' - d_{P_0}'$	$d_{P_2}' - d_{P_0}'$	$d_{P_4}' - d_{P_0}'$	$d_{P_6}' - d_{P_0}'$	$d_{P_8}' - d_{P_0}'$
m						
+ 6000	+ 0.6	0.0	- 0.1	- 0.3	- 1.0	- 1.1
+ 3000	+ 0.2	0.0	- 0.1	- 0.2	- 0.5	- 0.8
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.1	0.0	0.0	+ 0.2	+ 0.9	+ 1.6

ZONE 14  
 $T = 30 \text{ km}$

$h$	$P_0'$ $R = 0$	$P_1' - P_0'$ $R = 29.05$	$P_2' - P_0'$ $R = 58.10$	$P_4' - P_0'$ $R = 116.20$	$P_6' - P_0'$ $R = 174.30$	$P_8' - P_0'$ $R = 232.40$	
$m$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	
+ 6000	- 168	3.6	1	3	15	37	87
+ 5000	- 132	3.3	1	3	12	30	70
+ 4000	- 99	2.9	1	2	9	23	54
+ 3000	- 70	2.7	0	2	7	17	39
+ 2000	- 43	2.3	0	1	4	11	25
+ 1000	- 20	2.0	0	0	2	5	12
0	0	1.7	0	0	0	0	0
- 1000	+ 17	1.3	0	0	+ 2	+ 5	+ 10
- 2000	+ 30	0.9	0	+ 1	+ 3	+ 8	+ 20
- 3000	+ 39	0.5	0	+ 1	+ 4	+ 12	+ 27
- 4000	+ 44	0.2	0	+ 1	+ 5	+ 14	+ 33
- 5000	+ 46		0	+ 1	+ 6	+ 16	+ 37

## CORRECTION FOR ELEVATION OF STATION.

$dp' = \text{correction per } 1000 \text{ m elevation.}$

$h$	$d_{P_0}'$	$d_{P_1}' - d_{P_0}'$	$d_{P_2}' - d_{P_0}'$	$d_{P_4}' - d_{P_0}'$	$d_{P_6}' - d_{P_0}'$	$d_{P_8}' - d_{P_0}'$
$m$						
+ 6000	+ 0.4	0.0	- 0.1	- 0.3	- 0.6	- 1.3
+ 3000	+ 0.1	0.0	0.0	- 0.1	- 0.3	- 0.8
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.1	0.0	0.0	+ 0.2	+ 0.4	+ 1.0

ZONE 13  
 $T = 30 \text{ km}$

$h$	$p_0'$ $R = 0$	$p_1' - p_0'$ $R = 29.05$	$p_2' - p_0'$ $R = 58.10$	$p_4' - p_0'$ $R = 116.20$	$p_6' - p_0'$ $R = 174.30$	$p_8' - p_0'$ $R = 232.40$
m	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$
+ 6000	— 262	— 1	— 3	— 14	— 35	— 75
+ 5000	5.6	— 1	— 3	— 11	— 28	— 59
+ 4000	5.1	— 1	— 2	— 9	— 21	— 45
+ 3000	4.7	0	— 1	— 6	— 15	— 32
+ 2000	4.1	0	— 1	— 4	— 10	— 20
+ 1000	3.6	0	0	— 2	— 5	— 10
0	3.1	0	0	0	0	0
— 1000	2.6	0	0	+ 2	+ 4	+ 8
— 2000	2.0	0	+ 1	+ 3	+ 7	+ 16
— 3000	1.5	0	+ 1	+ 4	+ 10	+ 22
— 4000	0.7	0	+ 1	+ 5	+ 12	+ 26
— 5000	0.3	0	+ 1	+ 6	+ 14	+ 30

## CORRECTION FOR ELEVATION OF STATION.

$d_p' = \text{correction per 1000 m elevation.}$

$h$	$d_{p_0}'$	$d_{p_1}' - d_{p_0}'$	$d_{p_2}' - d_{p_0}'$	$d_{p_4}' - d_{p_0}'$	$d_{p_6}' - d_{p_0}'$	$d_{p_8}' - d_{p_0}'$
m						
+ 6000	+ 0.5	0.0	— 0.1	— 0.2	— 0.7	— 1.5
+ 3000	+ 0.2	0.0	— 0.1	— 0.1	— 0.3	— 0.8
0	0.0	0.0	0.0	0.0	0.0	0.0
— 3000	0.0	0.0	0.0	+ 0.2	+ 0.4	+ 0.8

## ZONE 12

 $T = 30 \text{ km}$ 

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.05$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_6' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	159	3.4	0	0.0	1	0.0	5	0.1	11	0.2	21	0.4
+ 5000	125	3.1	0	0.0	1	0.0	4	0.1	9	0.2	17	0.4
+ 4000	94	2.8	0	0.0	1	0.1	3	0.1	7	0.2	13	0.4
+ 3000	66	2.5	0	0.0	0	0.0	2	0.1	5	0.2	9	0.3
+ 2000	41	2.2	0	0.0	0	0.0	1	0.0	3	0.2	6	0.3
+ 1000	19	1.9	0	0.0	0	0.0	1	0.1	1	0.1	3	0.3
0	0	1.6	0	0.0	0	0.0	0	0.1	0	0.1	0	0.2
- 1000	+ 16	1.2	0	0.0	0	0.0	+ 1	0.0	+ 1	0.1	+ 2	0.2
- 2000	+ 28	0.8	0	0.0	0	0.0	+ 1	0.0	+ 2	0.1	+ 4	0.2
- 3000	+ 36	0.5	0	0.0	0	0.0	+ 1	0.1	+ 3	0.1	+ 6	0.1
- 4000	+ 41	0.2	0	0.0	0	0.0	+ 2	0.0	+ 4	0.0	+ 7	0.2
- 5000	+ 43		0		0		+ 2		+ 4		6	+

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$					$dp_8' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000					- 0.2	- 0.4
+ 3000					- 0.1	- 0.2
0					0.0	0.0
- 3000					+ 0.1	+ 0.2

## ZONE II

 $T = 30 \text{ km}$ 

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.05$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_6' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
+ 6000	- 125	2.7	0	0.0	- 1	0.1	- 2	0.0	- 5	0.1	- 9	0.2
+ 5000	- 98	2.4	0	0.0	0	0.0	- 2	0.1	- 4	0.1	- 7	0.1
+ 4000	- 74	2.2	0	0.0	0	0.0	- 1	0.0	- 3	0.1	- 6	0.2
+ 3000	- 52	2.0	0	0.0	0	0.0	- 1	0.0	- 2	0.1	- 4	0.1
+ 2000	- 32	1.7	0	0.0	0	0.0	- 1	0.1	- 1	0.0	- 3	0.2
+ 1000	- 15	1.5	0	0.0	0	0.0	0	0.0	- 1	0.1	- 1	0.1
0	0	1.3	0	0.0	0	0.0	0	0.0	0	0.1	0	0.1
- 1000	+ 13	0.9	0	0.0	0	0.0	0	0.0	+ 1	0.0	+ 1	0.1
- 2000	+ 22	0.8	0	0.0	0	0.0	0	0.1	+ 1	0.0	+ 2	0.1
- 3000	+ 30	0.3	0	0.0	0	0.0	+ 1	0.0	+ 1	0.1	+ 3	0.0
- 4000	+ 33	0.1	0	0.0	0	0.0	+ 1	0.0	+ 2	0.0	+ 3	0.1
- 5000	+ 34		0	0.0	0	0.0	+ 1	0.0	+ 2		+ 4	

## ZONE 10

 $T = 30 \text{ km}$ 

$L$	$P_0'$	$P_1' - P_0'$	$P_2' - P_0'$	$P_4' - P_0'$	$P_6' - P_0'$	$P_8' - P_0'$
0.1 mgal						
- 60	- 41	0	0	0	- 1	- 2
- 40	- 25	0	0	0	- 1	- 1
- 20	- 12	0	0	0	0	- 1
0	0	0	0	0	0	0
+ 20	+ 10	0	0	0	0	0
+ 40	+ 17	0	0	0	0	+ 1
+ 60	+ 22	0	0	0	+ 1	+ 1
+ 80	+ 26	0	0	0	+ 1	+ 1

ZONE 9  
 $T = 30 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal						
-20	-12	0	0	0	0	0
0	0	0	0	0	0	0
+20	+9	0	0	0	0	0
+40	+15	0	0	0	0	0

ZONE 8  
 $T = 30 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal						
-20	-12	0	0	0	0	0
0	0	0	0	0	0	0
+20	+9	0	0	0	0	0
+40	+15	0	0	0	0	0

ZONES 7--1  
 $T = 30 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal						
0	0	0	0	0	0	0
+20	+10	0	0	0	0	0
+40	+18	0	0	0	0	0
+60	+25	0	0	0	0	0









## ZONE K

 $T = 40 \text{ km}$ 

$h$	$P_0$ $R = 0$		$P_1$ $R = 29.05$		$P_2$ $R = 58.10$		$P_4$ $R = 116.20$		$P_6$ $R = 174.30$		$P_8$ $R = 232.40$	
	$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$	
m												
+ 6000	- 208	1.8	- 191	1.8	- 110	1.2	- 93	1.2	- 59	0.8	- 42	0.6
+ 5500	- 199	2.0	- 182	2.2	- 104	1.2	- 87	1.2	- 55	0.8	- 39	0.8
+ 5000	- 189	2.6	- 171	2.4	- 98	1.4	- 81	1.4	- 51	0.8	- 35	0.6
+ 4500	- 176	2.8	- 159	2.6	- 91	1.6	- 74	1.4	- 47	1.0	- 32	0.6
+ 4000	- 162	3.0	- 146	3.0	- 83	1.6	- 67	1.4	- 42	0.8	- 29	0.6
+ 3500	- 147	3.2	- 131	3.0	- 75	1.8	- 60	1.4	- 38	1.0	- 26	0.8
+ 3000	- 131	3.6	- 116	3.2	- 66	1.8	- 53	1.6	- 33	1.0	- 22	0.6
+ 2500	- 113	3.8	- 100	3.4	- 57	2.0	- 45	1.6	- 28	1.0	- 19	0.8
+ 2000	- 94	4.2	- 83	3.6	- 47	2.2	- 37	1.8	- 23	1.2	- 15	0.6
+ 1500	- 73	4.4	- 65	4.0	- 36	2.2	- 28	1.8	- 17	1.0	- 12	0.8
+ 1000	- 51	4.8	- 45	4.2	- 25	2.4	- 19	1.8	- 12	1.2	- 8	0.8
+ 500	- 27	5.4	- 24	4.8	- 13	2.6	- 10	2.0	- 6	1.2	- 4	0.8
0	0	5.8	0	5.2	0	2.8	0	2.0	0	1.2	0	0.8
- 500	+ 29	6.4	+ 26	5.6	+ 14	2.8	+ 10	2.2	+ 6	1.2	+ 4	0.8
- 1000	+ 61	7.0	+ 54	6.2	+ 28	3.2	+ 21	2.2	+ 12	1.4	+ 8	0.8
- 1500	+ 96	7.8	+ 85	6.6	+ 44	3.4	+ 32	2.4	+ 19	1.4	+ 12	1.0
- 2000	+ 135	8.4	+ 118	7.4	+ 61	3.6	+ 44	2.4	+ 26	1.4	+ 17	0.8
- 2500	+ 177	9.6	+ 155	8.0	+ 79	4.0	+ 56	2.6	+ 33	1.4	+ 21	1.0
- 3000	+ 225	10.4	+ 195	9.0	+ 99	4.2	+ 69	2.8	+ 40	1.4	+ 26	1.0
- 3500	+ 277	11.6	+ 240	10.0	+ 120	4.6	+ 83	2.8	+ 47	1.6	+ 31	1.0
- 4000	+ 335	13.0	+ 290	11.0	+ 143	5.0	+ 97	3.0	+ 55	1.6	+ 36	1.0
- 4500	+ 400	14.2	+ 345	12.2	+ 168	5.6	+ 112	3.2	+ 63	1.8	+ 41	1.0
- 5000	+ 471		+ 406		+ 196		+ 128		+ 72		+ 46	

CORRECTION FOR ELEVATION OF STATION.

 $dp = \text{correction per 1000 m elevation.}$ 

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_6}$	$d_{p_8}$
m						
+ 6000	+ 8.6	+ 7.1	+ 3.5	+ 2.0	+ 0.9	+ 0.5
+ 5000	+ 7.3	+ 6.0	+ 2.9	+ 1.7	+ 0.8	+ 0.4
+ 4000	+ 5.6	+ 4.4	+ 2.2	+ 1.3	+ 0.6	+ 0.3
+ 3000	+ 4.6	+ 4.0	+ 1.9	+ 1.0	+ 0.5	+ 0.2
+ 2000	+ 3.4	+ 3.1	+ 1.4	+ 0.8	+ 0.3	+ 0.2
+ 1000	+ 1.9	+ 1.8	+ 0.8	+ 0.4	+ 0.1	+ 0.1
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	- 2.4	- 2.0	- 0.8	- 0.4	- 0.2	- 0.1

## ZONE L

 $T = 40 \text{ km}$ 

$h$	$P_0$		$P_1$		$P_2$		$P_4$		$P_6$		$P_8$	
	$R = 0$	$\Delta$	$R = 29.05$	$\Delta$	$R = 58.10$	$\Delta$	$R = 116.20$	$\Delta$	$R = 174.30$	$\Delta$	$R = 232.40$	$\Delta$
m												
+ 6000	- 423	4.2	- 398	4.0	- 382	4.2	- 212	7.6	- 139	2.0	- 96	1.4
+ 5500	- 402	4.8	- 378	4.6	- 361	4.6	- 199	2.8	- 129	2.0	- 89	1.4
+ 5000	- 378	5.2	- 355	5.0	- 338	5.0	- 185	3.0	- 119	2.0	- 82	1.4
+ 4500	- 352	6.0	- 330	5.4	- 313	5.6	- 170	3.4	- 109	2.2	- 75	1.4
+ 4000	- 322	6.4	- 303	6.0	- 285	5.8	- 153	3.2	- 98	2.2	- 68	1.6
+ 3500	- 290	6.8	- 273	6.4	- 256	6.2	- 137	3.4	- 87	2.2	- 60	1.6
+ 3000	- 256	7.2	- 241	6.8	- 225	6.4	- 120	3.6	- 76	2.4	- 52	1.6
+ 2500	- 220	7.6	- 207	7.2	- 193	6.8	- 102	3.8	- 64	2.4	- 44	1.8
+ 2000	- 182	8.2	- 171	7.8	- 159	7.2	- 83	3.8	- 52	2.4	- 35	1.6
+ 1500	- 141	8.8	- 132	8.2	- 123	7.8	- 64	4.0	- 40	2.6	- 27	1.8
+ 1000	- 97	9.4	- 91	8.8	- 84	8.2	- 44	4.4	- 27	2.6	- 18	1.8
+ 500	- 50	10.0	- 47	9.4	- 43	8.6	- 22	4.4	- 14	2.8	- 9	1.8
0	0	10.8	0	10.0	0	9.2	0	4.6	0	2.8	0	1.8
- 500	+ 54	11.4	+ 50	10.8	+ 46	9.8	+ 23	5.0	+ 14	3.0	+ 9	2.0
- 1000	+ 111	12.4	+ 104	11.6	+ 95	10.6	+ 48	5.0	+ 29	3.0	+ 19	2.0
- 1500	+ 173	13.0	+ 162	12.4	+ 148	11.0	+ 73	5.2	+ 44	3.2	+ 29	2.0
- 2000	+ 238	14.2	+ 224	13.4	+ 203	12.0	+ 99	5.6	+ 60	3.2	+ 39	2.2
- 2500	+ 309	14.8	+ 291	14.6	+ 263	12.8	+ 127	5.8	+ 76	3.4	+ 50	2.2
- 3000	+ 383	15.8	+ 364	15.6	+ 327	13.6	+ 156	6.2	+ 93	3.4	+ 61	2.2
- 3500	+ 462	16.6	+ 442	16.8	+ 395	14.8	+ 187	6.4	+ 110	3.6	+ 72	2.4
- 4000	+ 545	17.6	+ 526	18.0	+ 469	15.8	+ 219	6.6	+ 128	3.8	+ 84	2.4
- 4500	+ 633	17.8	+ 616	19.6	+ 548	17.0	+ 252	7.0	+ 147	4.0	+ 96	2.4
- 5000	+ 722		+ 714		+ 633		+ 287		+ 167		+ 108	

CORRECTION FOR ELEVATION OF STATION.

 $d_p = \text{correction per 1000 m elevation.}$ 

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_6}$	$d_{p_8}$
m						
+ 6000	+ 14.0	+ 13.1	+ 10.9	+ 4.3	+ 2.1	+ 1.1
+ 5000	+ 11.8	+ 11.0	+ 9.1	+ 3.6	+ 1.7	+ 1.0
+ 4000	+ 9.1	+ 8.6	+ 7.1	+ 2.8	+ 1.4	+ 0.8
+ 3000	+ 7.6	+ 6.8	+ 5.8	+ 2.3	+ 1.1	+ 0.6
+ 2000	+ 5.3	+ 4.7	+ 4.2	+ 1.6	+ 0.8	+ 0.4
+ 1000	+ 2.9	+ 2.6	+ 2.2	+ 0.9	+ 0.4	+ 0.2
0	0.0	0.0	0.0	0.0	0.0	0.0
- 1000	- 3.3	- 3.2	- 2.6	- 0.9	- 0.4	- 0.2

## ZONE M

 $T = 40 \text{ km}$ 

$h$	$P_0$ $R = 0$	$P_1$ $R = 29.05$	$P_2$ $R = 58.10$	$P_4$ $R = 116.20$	$P_8$ $R = 174.30$	$P_8$ $R = 232.40$
$m$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$
+ 6000	-1384 18.6	-1377 18.2	-1312 16.6	-989 13.0	-697 9.8	-504 7.8
+ 5500	-1291 19.4	-1286 18.8	-1229 17.8	-924 13.6	-648 10.0	-465 7.8
+ 5000	-1194 20.4	-1192 19.8	-1140 18.4	-856 14.2	-598 10.4	-426 7.8
+ 4500	-1092 21.0	-1093 21.4	-1048 19.8	-785 15.2	-546 10.8	-387 7.8
+ 4000	-987 22.0	-986 22.0	-949 20.6	-709 15.6	-492 11.2	-348 8.0
+ 3500	-877 22.6	-876 22.2	-846 21.4	-631 16.0	-436 11.4	-308 8.2
+ 3000	-764 23.4	-765 23.0	-739 22.0	-551 16.8	-379 11.6	-267 8.4
+ 2500	-647 24.4	-650 23.8	-629 23.2	-467 17.4	-321 12.0	-225 8.6
+ 2000	-525 25.0	-531 24.8	-513 24.0	-380 18.0	-261 12.4	-182 8.8
+ 1500	-400 26.0	-407 25.8	-393 25.2	-290 18.6	-199 13.0	-138 9.0
+ 1000	-270 26.6	-278 27.2	-267 26.0	-197 19.4	-134 13.2	-93 9.2
+ 500	-137 27.4	-142 28.4	-137 27.4	-100 20.0	-68 13.6	-47 9.4
0	0	0	0	0	0	0
- 500	+ 141 28.2	+ 149 29.8	+ 143 28.6	+ 104 20.8	+ 70 14.0	+ 49 9.8
-1000	+ 284 28.6	+ 301 30.4	+ 291 29.6	+ 212 21.6	+ 143 14.6	+ 99 10.0
-1500	+ 430 29.2	+ 456 31.0	+ 446 31.0	+ 324 22.4	+ 217 14.8	+ 150 10.2
-2000	+ 578 29.6	+ 614 31.6	+ 606 32.0	+ 441 23.4	+ 294 15.4	+ 202 10.4
-2500	+ 728 30.0	+ 774 32.0	+ 774 33.6	+ 563 24.4	+ 374 16.0	+ 256 10.8
-3000	+ 877 29.8	+ 934 32.0	+ 948 34.8	+ 689 25.2	+ 456 16.4	+ 312 11.2
-3500	+ 1026 29.8	+ 1095 32.2	+ 1130 36.4	+ 822 26.6	+ 541 17.0	+ 369 11.4
-4000	+ 1172 29.2	+ 1254 31.8	+ 1317 37.4	+ 959 27.4	+ 628 17.4	+ 427 11.6
-4500	+ 1314 28.4	+ 1413 31.8	+ 1514 39.4	+ 1102 28.6	+ 719 18.2	+ 487 12.0
-5000	+ 1450 27.2	+ 1571 31.6	+ 1717 40.6	+ 1250 29.6	+ 812 18.6	+ 548 12.2

## CORRECTION FOR ELEVATION OF STATION.

 $d\dot{p}$  = correction per 1000 m elevation.

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_8}$	$d_{p_8}$
$m$						
+ 6000	+ 21.4	+ 25.3	+ 25.9	+ 17.1	+ 9.7	+ 4.4
+ 5000	+ 17.8	+ 21.4	+ 21.7	+ 14.3	+ 8.1	+ 3.7
+ 4000	+ 14.2	+ 16.0	+ 17.0	+ 11.3	+ 6.3	+ 3.8
+ 3000	+ 10.6	+ 13.9	+ 13.4	+ 8.7	+ 5.1	+ 2.9
+ 2000	+ 7.0	+ 11.5	+ 9.5	+ 6.0	+ 3.6	+ 2.0
+ 1000	+ 3.4	+ 5.9	+ 5.0	+ 3.1	+ 1.9	+ 1.0
0	0.0	0.0	0.0	0.0	0.0	0.0
-1000	- 2.9	- 4.4	- 5.3	- 3.5	- 1.9	- 1.2
-2000	- 5.0	- 6.9	- 11.0	- 7.6	- 4.0	- 2.4
-3000	- 5.5	- 8.0	- 16.9	- 12.0	- 6.2	- 3.7

## ZONE N

 $T = 40 \text{ km}$ 

$h$	$P_0$ $R = 0$		$P_1$ $R = 29.05$		$P_2$ $R = 58.10$		$P_4$ $R = 116.20$		$P_6$ $R = 174.30$		$P_8$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	-1320	22.4	-1349	22.2	-1441	23.0	-1516	22.0	-1272	18.4	-1005	14.8
+ 5500	-1208	22.4	-1238	22.4	-1326	23.0	-1406	22.4	-1180	18.8	- 931	15.2
+ 5000	-1096	22.2	-1126	22.2	-1211	23.4	-1294	23.0	-1086	19.2	- 855	15.6
+ 4500	- 985	22.0	-1015	22.2	-1094	23.4	-1179	23.8	- 990	20.0	- 777	16.0
+ 4000	- 875	22.0	- 904	22.4	- 977	23.6	-1060	24.4	- 890	20.6	- 697	16.2
+ 3500	- 765	22.0	- 792	22.4	- 859	24.0	- 938	24.8	- 787	20.8	- 616	16.6
+ 3000	- 655	22.0	- 680	22.8	- 739	24.2	- 814	25.6	- 683	21.4	- 533	16.8
+ 2500	- 545	22.2	- 566	22.8	- 618	24.4	- 686	26.2	- 576	22.0	- 449	17.2
+ 2000	- 434	22.0	- 452	22.8	- 496	24.6	- 555	26.8	- 466	22.4	- 363	17.6
+ 1500	- 324	21.8	- 338	22.8	- 373	24.8	- 421	27.4	- 354	23.0	- 275	18.0
+ 1000	- 215	21.6	- 224	22.4	- 249	24.8	- 284	28.0	- 239	23.6	- 185	18.2
+ 500	- 107	21.4	- 112	22.4	- 125	25.0	- 144	28.8	- 121	24.2	- 94	18.8
0	0	21.0	0	22.0	0	24.8	0	29.6	0	24.8	0	19.0
- 500	+ 105	20.4	+ 110	21.6	+ 124	24.8	+ 148	30.0	+ 124	25.4	+ 95	19.6
-1000	+ 207	20.0	+ 218	21.0	+ 248	24.6	+ 298	31.0	+ 251	26.0	+ 193	20.2
-1500	+ 307	19.4	+ 323	20.6	+ 371	24.4	+ 453	31.6	+ 381	26.4	+ 294	20.4
-2000	+ 404	18.6	+ 426	19.8	+ 493	24.0	+ 611	32.6	+ 513	27.4	+ 396	21.0
-2500	+ 497	17.8	+ 525	18.8	+ 613	23.4	+ 774	33.2	+ 650	27.8	+ 501	21.4
-3000	+ 586	16.8	+ 619	18.2	+ 730	22.8	+ 940	34.2	+ 789	28.8	+ 608	21.8
-3500	+ 670	15.8	+ 710	17.0	+ 844	22.0	+1111	35.0	+ 933	29.2	+ 717	22.4
-4000	+ 749	14.8	+ 795	16.0	+ 954	21.0	+1286	35.8	+1079	30.0	+ 829	22.8
-4500	+ 823	13.6	+ 875	14.8	+1059	20.0	+1465	36.4	+1229	30.6	+ 943	23.2
-5000	+ 891		+ 949		+1159		+1647		+1382		+1059	

## CORRECTION FOR ELEVATION OF STATION.

 $d_p = \text{correction per 1000 m elevation.}$ 

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_6}$	$d_{p_8}$
m						
+ 6000	- 2.6	+ 0.1	+ 4.9	+ 17.0	+ 14.4	+ 9.4
+ 5000	- 2.3	- 0.1	+ 4.0	+ 14.2	+ 12.0	+ 7.9
+ 4000	- 1.4	+ 0.6	+ 3.6	+ 11.3	+ 9.5	+ 6.2
+ 3000	- 1.8	- 0.7	+ 2.0	+ 8.6	+ 7.3	+ 3.6
+ 2000	- 1.7	- 1.2	+ 0.9	+ 5.6	+ 5.0	+ 3.4
+ 1000	- 1.2	- 1.0	+ 0.2	+ 3.0	+ 2.6	+ 1.7
0	0.0	0.0	0.0	0.0	0.0	0.0
-1000	+ 1.9	+ 1.7	+ 0.3	- 3.2	- 2.7	- 1.9
-2000	+ 4.5	+ 4.1	+ 1.3	- 6.7	- 5.5	- 4.0
-3000	+ 7.8	+ 7.5	+ 3.3	-10.2	- 8.4	- 6.1

ZONE O<sub>1</sub> $T = 40 \text{ km}$ 

$h$	$P_0$		$P_1$		$P_2$		$P_4$		$P_6$		$P_8$	
	$R = 0$	$\Delta$	$R = 29.05$	$\Delta$	$R = 58.10$	$\Delta$	$R = 116.20$	$\Delta$	$R = 174.30$	$\Delta$	$R = 232.40$	$\Delta$
m												
+ 6000	— 689		— 705		— 755		— 960		— 1060		— 951	
+ 5500	— 624	13.0	— 639	13.2	— 686	13.8	— 881	15.8	— 979	16.2	— 879	14.4
+ 5000	— 562	12.4	— 575	12.8	— 618	13.6	— 803	15.6	— 898	16.2	— 806	14.6
+ 4500	— 500	12.4	— 513	12.4	— 552	13.2	— 724	15.8	— 815	16.6	— 732	14.8
+ 4000	— 440	12.0	— 451	12.4	— 487	13.0	— 645	15.8	— 730	17.0	— 656	15.2
+ 3500	— 381	11.8	— 391	12.0	— 422	13.0	— 565	16.0	— 644	17.2	— 578	15.6
+ 3000	— 323	11.6	— 332	11.8	— 359	12.6	— 485	16.0	— 556	17.6	— 500	15.6
+ 2500	— 266	11.4	— 273	11.8	— 296	12.6	— 405	16.0	— 467	17.8	— 420	16.0
+ 2000	— 210	11.2	— 216	11.4	— 234	12.4	— 324	16.2	— 377	18.0	— 339	16.2
+ 1500	— 155	11.0	— 160	11.2	— 174	12.0	— 243	16.2	— 285	18.4	— 256	16.6
+ 1000	— 102	10.6	— 105	11.0	— 114	12.0	— 162	16.2	— 191	18.8	— 172	16.8
+ 500	— 50	10.4	— 52	10.6	— 56	11.6	— 81	16.2	— 97	18.8	— 87	17.0
0	0	10.0	0	10.4	0	11.2	0	16.2	0	19.4	0	17.4
— 500	+ 49	9.8	+ 50	10.0	+ 55	11.0	+ 81	16.2	+ 98	19.6	+ 88	17.6
— 1000	+ 95	9.2	+ 98	9.6	+ 107	10.4	+ 161	16.0	+ 198	20.0	+ 178	18.0
— 1500	+ 140	9.0	+ 144	9.2	+ 159	10.4	+ 241	16.0	+ 299	20.2	+ 269	18.2
— 2000	+ 182	8.4	+ 188	8.8	+ 208	9.8	+ 321	16.0	+ 402	20.6	+ 362	18.6
— 2500	+ 222	8.0	+ 230	8.4	+ 254	9.2	+ 399	15.6	+ 508	21.2	+ 457	19.0
— 3000	+ 260	7.6	+ 269	7.8	+ 298	8.8	+ 477	15.6	+ 614	21.2	+ 553	19.2
— 3500	+ 296	7.2	+ 305	7.2	+ 339	8.2	+ 553	15.2	+ 723	21.8	+ 650	19.4
— 4000	+ 328	6.4	+ 339	6.8	+ 377	7.6	+ 628	15.0	+ 834	22.2	+ 749	19.8
— 4500	+ 359	6.2	+ 371	6.4	+ 413	7.2	+ 701	14.6	+ 947	22.6	+ 850	20.2
— 5000	+ 386	5.4	+ 399	5.6	+ 446	6.6	+ 771	14.0	+ 1061	22.8	+ 952	20.4

## CORRECTION FOR ELEVATION OF STATION.

 $dp = \text{correction per 1000 m elevation.}$ 

$h$	$d_{p_0}$	$d_{p_1}$	$d_{p_2}$	$d_{p_4}$	$d_{p_6}$	$d_{p_8}$
m						
+ 6000	— 6.8	— 6.6	— 6.1	+ 1.3	+ 7.9	+ 7.6
+ 5000	— 5.7	— 5.6	— 5.1	+ 1.1	+ 6.6	+ 6.3
+ 4000	— 4.4	— 4.3	— 3.8	+ 1.0	+ 5.3	+ 5.0
+ 3000	— 3.6	— 3.5	— 3.4	+ 0.4	+ 4.0	+ 3.8
+ 2000	— 2.6	— 2.6	— 2.6	+ 0.1	+ 2.6	+ 2.5
+ 1000	— 1.4	— 1.4	— 1.4	— 0.1	+ 1.3	+ 1.3
0	0.0	0.0	0.0	0.0	0.0	0.0
— 1000	+ 1.6	+ 1.6	+ 1.5	+ 0.2	— 1.5	— 1.3
— 2000	+ 3.5	+ 3.5	+ 3.2	+ 0.8	— 3.1	— 2.7
— 3000	+ 5.6	+ 5.6	+ 5.7	+ 1.6	— 4.8	— 4.1

ZONE O<sub>2</sub>  
T = 40 km

h	P <sub>0</sub> R = 0		P <sub>1</sub> R = 29.05		P <sub>2</sub> R = 58.10		P <sub>4</sub> R = 116.20		P <sub>6</sub> R = 174.30		P <sub>8</sub> R = 232.40	
	m	Δ	m	Δ	m	Δ	m	Δ	m	Δ	m	Δ
+ 6000	467	9.0	475	9.2	511	9.8	623	11.2	830	13.2	929	15.2
+ 5500	422	8.8	429	8.8	462	9.6	567	11.2	764	13.4	853	15.2
+ 5000	378	8.6	385	8.8	414	9.4	511	11.0	697	13.6	777	15.2
+ 4500	335	8.2	341	8.4	367	9.0	456	10.8	629	13.6	701	15.4
+ 4000	294	8.2	299	8.2	322	8.8	402	10.6	561	13.6	624	15.4
+ 3500	253	7.8	258	8.0	278	8.6	349	10.4	493	13.8	547	15.4
+ 3000	214	7.6	218	7.8	235	8.4	297	10.4	424	14.0	470	15.4
+ 2500	176	7.6	179	7.6	193	8.2	245	10.2	354	14.0	393	15.6
+ 2000	138	7.2	141	7.4	152	8.0	194	10.0	284	14.0	315	15.6
+ 1500	102	7.0	104	7.2	112	7.8	144	9.8	214	14.2	237	15.6
+ 1000	67	6.8	68	7.0	73	7.4	95	9.6	143	14.2	159	15.8
+ 500	33	6.6	33	6.6	36	7.2	47	9.4	72	14.4	80	16.0
0	0	6.2	0	6.4	0	7.0	0	9.0	0	14.4	0	16.2
- 500	+ 31	6.0	+ 32	6.2	+ 35	6.6	+ 45	8.8	+ 72	14.4	+ 81	16.4
- 1000	+ 61	5.8	+ 63	5.8	+ 68	6.2	+ 89	8.4	+ 144	14.6	+ 163	16.8
- 1500	+ 90	5.4	+ 92	5.4	+ 99	6.0	+ 131	8.2	+ 217	14.6	+ 247	17.0
- 2000	+ 117	5.0	+ 119	5.2	+ 129	5.6	+ 172	7.6	+ 290	14.6	+ 332	17.2
- 2500	+ 142	4.8	+ 145	5.0	+ 157	5.2	+ 210	7.4	+ 363	14.6	+ 418	17.4
- 3000	+ 166	4.4	+ 170	4.6	+ 183	5.0	+ 247	7.0	+ 436	14.6	+ 505	17.8
- 3500	+ 188	4.2	+ 193	4.2	+ 208	4.4	+ 282	6.6	+ 509	14.6	+ 594	17.8
- 4000	+ 209	3.8	+ 214	3.8	+ 230	4.2	+ 315	6.2	+ 582	14.6	+ 683	18.2
- 4500	+ 228	3.4	+ 233	3.4	+ 251	3.8	+ 346	5.6	+ 655	14.4	+ 774	18.2
- 5000	+ 245		+ 250		+ 270		+ 374		+ 727		+ 865	

## CORRECTION FOR ELEVATION OF STATION.

$dp = \text{correction per 1000 m elevation.}$

h	d <sub>p0</sub>	d <sub>p1</sub>	d <sub>p2</sub>	d <sub>p4</sub>	d <sub>p6</sub>	d <sub>p8</sub>
m						
+ 6000	- 6.0	- 6.0	- 6.4	- 4.9	+ 2.6	+ 2.2
+ 5000	- 5.0	- 5.0	- 5.3	- 4.1	+ 2.3	+ 1.9
+ 4000	- 3.9	- 3.9	- 4.2	- 3.1	+ 1.7	+ 1.2
+ 3000	- 3.1	- 3.1	- 3.2	- 2.7	+ 1.3	+ 1.4
+ 2000	- 2.2	- 2.2	- 2.2	- 2.0	+ 0.8	+ 1.1
+ 1000	- 1.2	- 1.2	- 1.1	- 1.1	+ 0.4	+ 0.8
0	0.0	0.0	0.0	0.0	+ 0.0	+ 0.0
- 1000	+ 1.2	+ 1.2	+ 1.3	+ 1.3	- 0.3	- 1.0
- 2000	+ 2.5	+ 2.5	+ 2.8	+ 2.8	- 0.5	- 2.1
- 3000	+ 3.9	+ 3.8	+ 4.4	+ 4.4	- 0.8	- 3.2

## ZONE 18

 $T = 40 \text{ km}$ 

$h$ m	$P_0$ $R = 0$		$P_1$ $R = 29.05$		$P_2$ $R = 58.10$		$P_4$ $R = 116.20$		$P_6$ $R = 174.30$		$P_8$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
+ 6000	220	4.4	3	0.1	12	0.2	61	1.1	163	2.4	240	2.5
+ 5000	176	4.1	2	0.0	10	0.2	50	1.0	139	2.6	215	3.0
+ 4000	135	3.8	2	0.1	8	0.2	40	1.0	113	2.7	185	3.7
+ 3000	97	3.6	1	0.0	6	0.2	30	1.0	86	2.7	148	4.4
+ 2000	61	3.2	1	0.1	4	0.2	20	1.0	59	2.8	104	5.0
+ 1000	29	2.9	0	0.0	2	0.2	10	1.0	31	3.1	54	5.4
0	0	2.6	0	0.0	0	0.2	0	0.9	0	3.4	0	5.8
- 1000	+ 26	2.1	0	0.1	+ 2	0.1	+ 9	0.9	+ 34	3.4	+ 58	6.2
- 2000	+ 47	1.8	+ 1	0.0	+ 3	0.2	+ 18	0.8	+ 68	3.2	+ 120	6.6
- 3000	+ 65	1.3	+ 1	0.0	+ 5	0.1	+ 26	0.7	+ 100	2.9	+ 186	7.1
- 4000	+ 78	0.9	+ 1	0.1	+ 6	0.1	+ 33	0.6	+ 129	2.8	+ 257	7.6
- 5000	+ 87		+ 2		+ 7		+ 39		+ 157		+ 333	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$d_{P_0}'$	$d_{P_1}' - d_{P_0}'$	$d_{P_2}' - d_{P_0}'$	$d_{P_4}' - d_{P_0}'$	$d_{P_6}' - d_{P_0}'$	$d_{P_8}' - d_{P_0}'$
m						
+ 6000	+ 1.4	0.0	- 0.1	- 0.2	+ 2.1	+ 7.7
+ 3000	+ 0.6	0.0	0.0	- 0.1	+ 1.4	+ 3.5
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.4	+ 0.1	+ 0.1	+ 0.4	+ 0.3	- 2.9

## ZONE 17

 $T = 40 \text{ km}$ 

$h$	$p_0'$ $R = 0$	$p_1' - p_0'$ $R = 29.05$	$p_2' - p_0'$ $R = 58.10$	$p_4' - p_0'$ $R = 116.20$	$p_6' - p_0'$ $R = 174.30$	$p_8' - p_0'$ $R = 232.40$						
m	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$						
+ 6000	- 214	4.3	2	0.0	9	0.1	44	0.8	127	2.1	269	3.8
+ 5000	- 171	4.0	2	0.0	8	0.2	36	0.7	106	2.1	231	4.1
+ 4000	- 131	3.7	2	0.1	6	0.2	29	0.7	85	2.1	190	4.4
+ 3000	- 94	3.4	1	0.0	4	0.1	22	0.8	64	2.1	146	4.6
+ 2000	- 60	3.2	1	0.1	3	0.2	14	0.7	43	2.2	100	4.9
+ 1000	- 28	2.8	0	0.0	1	0.1	7	0.7	21	2.1	51	5.1
0	0	2.5	0	0.0	0	0.1	0	0.6	0	2.0	0	5.4
- 1000	+ 25	2.0	0	0.1	+ 1	0.2	+ 6	0.6	+ 20	2.0	+ 54	5.7
- 2000	+ 45	1.7	+ 1	0.0	+ 3	0.1	+ 12	0.6	+ 40	1.9	+ 111	6.0
- 3000	+ 62	1.3	+ 1	0.0	+ 4	0.1	+ 18	0.4	+ 59	1.8	+ 171	6.3
- 4000	+ 75	0.9	+ 1	0.0	+ 5	0.0	+ 22	0.4	+ 77	1.5	+ 234	6.5
- 5000	+ 84		+ 1		+ 5		+ 26		+ 92		+ 299	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000	+ 1.1	0.0	- 0.1	- 0.2	0.0	+ 3.6
+ 3000	+ 0.5	0.0	- 0.1	- 0.2	- 0.1	+ 1.9
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.1	0.0	+ 0.1	+ 0.3	+ 0.5	- 1.9

## ZONE 16

 $T = 40 \text{ km}$ 

$h$	$p_0'$ $R = 0$		$p_1' - p_0'$ $R = 29.05$		$p_2' - p_0'$ $R = 58.10$		$p_4' - p_0'$ $R = 116.20$		$p_6' - p_0'$ $R = 174.30$		$p_8' - p_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 210	4.3	- 2	0.1	- 7	0.1	- 29	0.5	- 99	2.0	- 238	3.8
+ 5000	- 167	3.9	- 1	0.0	- 6	0.1	- 24	0.5	- 79	1.8	- 200	3.9
+ 4000	- 128	3.7	- 1	0.0	- 5	0.2	- 19	0.5	- 61	1.7	- 161	4.0
+ 3000	- 91	3.3	- 1	0.0	- 3	0.1	- 14	0.5	- 44	1.5	- 121	4.0
+ 2000	- 58	3.1	- 1	0.1	- 2	0.1	- 9	0.4	- 29	1.5	- 81	4.0
+ 1000	- 27	2.7	0	0.0	- 1	0.1	- 5	0.5	- 14	1.4	- 41	4.1
0	0	2.4	0	0.0	0	0.1	0	0.4	0	1.4	0	4.1
- 1000	+ 24	2.0	0	0.0	+ 1	0.1	+ 4	0.4	+ 14	1.2	+ 41	4.2
- 2000	+ 44	1.6	0	0.1	+ 2	0.1	+ 8	0.4	+ 26	1.2	+ 83	4.2
- 3000	+ 60	1.3	+ 1	0.0	+ 3	0.0	+ 12	0.3	+ 38	1.0	+ 125	4.1
- 4000	+ 73	0.8	+ 1	0.0	+ 3	0.1	+ 15	0.3	+ 48	0.9	+ 166	3.9
- 5000	+ 81		+ 1		+ 4		+ 18		+ 57		+ 205	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000	+ 0.8	- 0.1	- 0.1	- 0.1	- 1.7	+ 0.7
+ 3000	+ 0.4	0.0	- 0.1	- 0.1	- 0.4	+ 0.3
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.1	0.0	+ 0.1	+ 0.2	+ 0.6	- 0.1

## ZONE 15

 $T = 40 \text{ km}$ 

$h$	$p_0'$ $R = 0$	$p_1' - p_0'$ $R = 29.05$	$p_2' - p_0'$ $R = 58.10$	$p_4' - p_0'$ $R = 116.20$	$p_6' - p_0'$ $R = 174.30$	$p_8' - p_0'$ $R = 232.40$						
m	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$	$\Delta$						
+ 6000	- 205	4.1	1	0.0	- 6	0.1	- 25	0.5	- 81	1.6	- 160	2.8
+ 5000	- 164	3.9	1	0.0	- 5	0.1	- 20	0.4	- 65	1.5	- 132	2.7
+ 4000	- 125	3.6	1	0.0	- 4	0.1	- 16	0.5	- 50	1.4	- 105	2.7
+ 3000	- 89	3.3	1	0.1	- 3	0.1	- 11	0.4	- 36	1.2	- 78	2.7
+ 2000	- 56	2.9	0	0.0	- 2	0.1	- 7	0.4	- 24	1.2	- 51	2.6
+ 1000	- 27	2.7	0	0.0	- 1	0.1	- 3	0.3	- 12	1.2	- 25	2.5
0	0	2.3	0	0.0	0	0.1	0	0.3	0	1.1	0	2.4
- 1000	+ 23	2.0	0	0.0	+ 1	0.0	+ 3	0.3	+ 11	1.0	+ 24	2.3
- 2000	+ 43	1.6	0	0.0	+ 1	0.1	+ 6	0.3	+ 21	0.9	+ 47	2.1
- 3000	+ 59	1.3	0	0.1	+ 2	0.0	+ 9	0.2	+ 30	0.8	+ 68	1.9
- 4000	+ 72	0.6	+ 1	0.0	+ 2	0.1	+ 11	0.2	+ 38	0.6	+ 87	1.6
- 5000	+ 78		+ 1		+ 3		+ 13		+ 44		+ 103	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000	+ 0.7	0.0	- 0.1	- 0.3	- 1.1	- 0.8
+ 3000	+ 0.4	0.0	0.0	- 0.2	- 0.5	- 0.5
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.1	0.0	+ 0.1	+ 0.2	+ 0.6	+ 1.0

ZONE I<sub>4</sub>  
*T = 40 km*

<i>h</i>	$p_0'$ <i>R = 0</i>		$p_1' - p_0'$ <i>R = 29.05</i>		$p_2' - p_0'$ <i>R = 58.10</i>		$p_4' - p_0'$ <i>R = 116.20</i>		$p_6' - p_0'$ <i>R = 174.30</i>		$p_8' - p_0'$ <i>R = 232.40</i>	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
<i>m</i>												
+ 6000	- 201	4.1	- 1	0.0	- 4	0.1	- 18	0.4	- 43	0.8	- 99	1.9
+ 5000	- 160	3.8	- 1	0.0	- 3	0.0	- 14	0.3	- 35	0.8	- 80	1.7
+ 4000	- 122	3.5	- 1	0.1	- 3	0.1	- 11	0.3	- 27	0.7	- 63	1.7
+ 3000	- 87	3.2	0	0.0	- 2	0.1	- 8	0.3	- 20	0.7	- 46	1.6
+ 2000	- 55	2.9	0	0.0	- 1	0.0	- 5	0.3	- 13	0.7	- 30	1.6
+ 1000	- 26	2.6	0	0.0	- 1	0.1	- 2	0.2	- 6	0.6	- 14	1.4
0	0	2.3	0	0.0	0	0.1	0	0.2	0	0.6	0	1.3
- 1000	+ 23	1.8	0	0.0	+ 1	0.0	+ 2	0.2	+ 6	0.5	+ 13	1.2
- 2000	+ 41	1.6	0	0.0	+ 1	0.0	+ 4	0.2	+ 11	0.5	+ 25	1.1
- 3000	+ 57	1.1	0	0.0	+ 1	0.1	+ 6	0.2	+ 16	0.4	+ 36	0.9
- 4000	+ 68	0.8	0	0.1	+ 2	0.0	+ 8	0.1	+ 20	0.3	+ 45	0.8
- 5000	+ 76		+ 1		+ 2		+ 9		+ 23		+ 53	

## CORRECTION FOR ELEVATION OF STATION.

*dp' = correction per 1000 m elevation.*

<i>h</i>	$d_{p_0}'$	$d_{p_1}' - d_{p_0}'$	$d_{p_2}' - d_{p_0}'$	$d_{p_4}' - d_{p_0}'$	$d_{p_6}' - d_{p_0}'$	$d_{p_8}' - d_{p_0}'$
<i>m</i>						
+ 6000	+ 0.4	0.0	0.0	- 0.3	- 0.6	- 1.1
+ 3000	+ 0.2	0.0	0.0	- 0.1	- 0.3	- 0.6
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.2	0.0	0.0	+ 0.2	+ 0.4	+ 0.8

## ZONE 13

 $T = 40 \text{ km}$ 

$h$	$p_0'$ $R = 0$		$p_1' - p_0'$ $R = 29.05$		$p_2' - p_0'$ $R = 58.10$		$p_4' - p_0'$ $R = 116.20$		$p_6' - p_0'$ $R = 174.30$		$p_8' - p_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 315	6.5	- 1	0.0	- 4	0.1	- 17	0.4	- 41	0.8	- 89	1.7
+ 5000	- 250	6.0	- 1	0.0	- 3	0.0	- 13	0.3	- 33	0.7	- 72	1.7
+ 4000	- 190	5.5	- 1	0.1	- 3	0.1	- 10	0.2	- 26	0.7	- 55	1.5
+ 3000	- 135	5.0	0	0.0	- 2	0.1	- 8	0.3	- 19	0.7	- 40	1.4
+ 2000	- 85	4.4	0	0.0	- 1	0.0	- 5	0.3	- 12	0.6	- 26	1.4
+ 1000	- 41	4.1	0	0.0	- 1	0.1	- 2	0.2	- 6	0.6	- 12	1.2
0	0	3.5	0	0.0	0	0.0	0	0.2	0	0.5	0	1.1
- 1000	+ 35	2.9	0	0.0	0	0.1	+ 2	0.2	+ 5	0.5	+ 11	1.0
- 2000	+ 64	2.5	0	0.0	+ 1	0.0	+ 4	0.2	+ 10	0.4	+ 21	0.9
- 3000	+ 89	1.7	0	0.0	+ 1	0.1	+ 6	0.1	+ 14	0.3	+ 30	0.7
- 4000	+ 106	1.2	0	0.1	+ 2	0.0	+ 7	0.1	+ 17	0.3	+ 37	0.6
- 5000	+ 118		+ 1		+ 2		+ 8		+ 20		+ 43	

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000	+ 0.6	0.0	0.0	- 0.3	- 0.7	- 1.4
+ 3000	+ 0.3	0.0	0.0	- 0.2	- 0.3	- 0.8
0	0.0	0.0	0.0	0.0	0.0	0.0
- 3000	- 0.1	0.0	0.0	+ 0.1	+ 0.3	+ 0.8

## ZONE 12

 $T = 40 \text{ km}$ 

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.05$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_6' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 193	4.0	0	0.0	- 1	0.0	- 6	0.1	- 13	0.3	- 25	0.5
+ 5000	- 153	3.7	0	0.0	- 1	0.0	- 5	0.2	- 10	0.2	- 20	0.5
+ 4000	- 116	3.3	0	0.0	- 1	0.0	- 3	0.1	- 8	0.2	- 15	0.4
+ 3000	- 83	3.1	0	0.0	- 1	0.1	- 2	0.0	- 6	0.2	- 11	0.4
+ 2000	- 52	2.7	0	0.0	0	0.0	- 2	0.1	- 4	0.2	- 7	0.4
+ 1000	- 25	2.5	0	0.0	0	0.0	- 1	0.1	- 2	0.2	- 3	0.3
0	0	2.2	0	0.0	0	0.0	0	0.1	0	0.2	0	0.3
- 1000	+ 22	1.7	0	0.0	0	0.0	+ 1	0.0	+ 2	0.1	+ 3	0.3
- 2000	+ 39	1.5	0	0.0	0	0.0	+ 1	0.1	+ 3	0.1	+ 6	0.2
- 3000	+ 54	1.0	0	0.0	0	0.1	+ 2	0.0	+ 4	0.1	+ 8	0.2
- 4000	+ 64	0.8	0	0.0	+ 1	0.1	+ 2	0.1	+ 5	0.1	+ 10	0.2
- 5000	+ 72		0	0.0	+ 1	0.0	+ 3	0.1	+ 6	0.1	+ 12	0.2

## CORRECTION FOR ELEVATION OF STATION.

 $dp' = \text{correction per 1000 m elevation.}$ 

$h$	$dp_0'$	$dp_1' - dp_0'$	$dp_2' - dp_0'$	$dp_4' - dp_0'$	$dp_6' - dp_0'$	$dp_8' - dp_0'$
m						
+ 6000				- 0.1	- 0.2	- 0.5
+ 3000				- 0.1	- 0.1	- 0.2
0				0.0	0.0	0.0
- 3000				+ 0.1	+ 0.1	+ 0.2

## ZONE II

 $T = 40 \text{ km}$ 

$h$	$P_0'$ $R = 0$		$P_1' - P_0'$ $R = 29.05$		$P_2' - P_0'$ $R = 58.10$		$P_4' - P_0'$ $R = 116.20$		$P_6' - P_0'$ $R = 174.30$		$P_8' - P_0'$ $R = 232.40$	
		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$		$\Delta$
m												
+ 6000	- 152	3.2	0	0.0	- 1	0.1	- 3	0.1	- 6	0.1	- 11	0.2
+ 5000	- 120	2.8	0	0.0	0	0.0	- 2	0.0	- 5	0.2	- 9	0.2
+ 4000	- 92	2.7	0	0.0	0	0.0	- 2	0.1	- 3	0.1	- 7	0.2
+ 3000	- 65	2.4	0	0.0	0	0.0	- 1	0.0	- 2	0.0	- 5	0.2
+ 2000	- 41	2.2	0	0.0	0	0.0	- 1	0.1	- 2	0.1	- 3	0.1
+ 1000	- 19	1.9	0	0.0	0	0.0	0	0.0	- 1	0.1	- 2	0.2
0	0	1.7	0	0.0	0	0.0	0	0.0	0	0.1	0	0.1
- 1000	+ 17	1.4	0	0.0	0	0.0	0	0.1	+ 1	0.0	+ 1	0.2
- 2000	+ 31	1.2	0	0.0	0	0.0	+ 1	0.0	+ 1	0.1	+ 3	0.1
- 3000	+ 43	0.8	0	0.0	0	0.0	+ 1	0.0	+ 2	0.0	+ 4	0.1
- 4000	+ 51	0.6	0	0.0	0	0.0	+ 1	0.0	+ 2	0.1	+ 5	0.0
- 5000	+ 57		0	0.0	0	0.0	+ 1	0.0	+ 3	0.1	+ 5	0.0

## ZONE IO

 $T = 40 \text{ km}$ 

$L$	$P_0'$	$P_1' - P_0'$	$P_2' - P_0'$	$P_4' - P_0'$	$P_6' - P_0'$	$P_8' - P_0'$
0.1 mgal						
- 60	- 52	0	0	0	- 1	- 2
- 40	- 33	0	0	0	- 1	- 1
- 20	- 15	0	0	0	0	- 1
0	0	0	0	0	0	0
+ 20	+ 13	0	0	0	0	+ 1
+ 40	+ 24	0	0	0	+ 1	+ 1
+ 60	+ 33	0	0	0	+ 1	+ 2
+ 80	+ 39	0	0	0	+ 1	+ 2

ZONE 9  
 $T = 40 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal						
-20	-16	0	0	0	0	0
0	0	0	0	0	0	0
+20	+12	0	0	0	0	0
+40	+22	0	0	0	0	0

ZONE 8  
 $T = 40 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal						
-20	-16	0	0	0	0	0
0	0	0	0	0	0	0
+20	+12	0	0	0	0	0
+40	+22	0	0	0	0	0

ZONES 7-I  
 $T = 40 \text{ km}$

$L$	$p_0'$	$p_1' - p_0'$	$p_2' - p_0'$	$p_4' - p_0'$	$p_6' - p_0'$	$p_8' - p_0'$
0.1 mgal						
0	0	0	0	0	0	0
+20	+13	0	0	0	0	0
+40	+25	0	0	0	0	0
+60	+35	0	0	0	0	0

